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# Measurement of the Steady Surface Pressure Distribution on a Single Rotation Large Scale Advanced Prop-Fan Blade at Mach Numbers from 0.03 to 0.78

(NASA-CR-182124) MEASUREMENT OF THE STEADY  
SURFACE PRESSURE DISTRIBUTION ON A SINGLE  
ROTATION LARGE SCALE ADVANCED PROP-FAN BLADE  
AT MACH NUMBERS FROM 0.03 TO 0.78 Final  
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Peter Bushnell

*Hamilton Standard*

*Windsor Locks, Connecticut*

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## SUMMARY

An experimental investigation to determine the aerodynamic pressure distribution on a rotating Prop-Fan blade has been performed by Hamilton Standard Division of United Technologies Corporation, under contract to NASA-Lewis Research Center, at the S1-MA wind tunnel facility operated by the Office National D'Etudes et de Recherches Aeronautiques (ONERA) in Modane, France.

The investigation consisted of measuring the pressure distributions at thirteen radial stations on a single rotation Large Scale Advanced Prop-Fan (LAP/SR7) blade, for a sequence of operating conditions including inflow Mach numbers ranging from 0.03 to 0.78. Pressure distributions for more than one power coefficient and/or advance ratio setting were measured for most of the inflow Mach numbers investigated.

Due to facility power limitations the Prop-Fan test installation was a two bladed version of the eight bladed design configuration. The power coefficient range investigated was therefore selected to cover typical power loading per blade conditions which occur within the Prop-Fan operating envelope.

The experimental results provide an extensive source of information on the aerodynamic behavior of the swept Prop-Fan blade, including details which have been elusive to current computational models and do not appear in two dimensional airfoil data.

## INTRODUCTION

Prop-Fans are high cruise speed, single or counter rotation, highly loaded, variable pitch advanced turboprops. Prop-Fan blades incorporate thin airfoils with sweep and are integrated with a spinner and nacelle shaped to reduce axial Mach number through the rotor. This configuration minimizes compressibility losses and results in higher propulsive efficiency than is achievable by high bypass turbofans.

Since 1974 NASA sponsored Prop-Fan research at Hamilton Standard has proceeded through a series of wind tunnel studies of model Prop-Fans, and through the current Large Scale Advanced Prop-Fan (LAP) program and the follow-on Prop-Fan Test Assessment (PTA) flight test program.

Over the last several years it has become increasingly evident that detailed measurements of the aerodynamic characteristics of Prop-Fan blades are required to understand the specific nature of Prop-Fan blade flows. Such flows are

complicated, containing features such as three dimensional boundary layer effects, leading and tip edge vorticies and shock waves, and are therefore not easily predicted, yet an understanding of the specific nature of Prop-Fan blade flows is vital to the process of refining design methodologies and improving the performance of new Prop-Fan designs.

The need for measured Prop-Fan blade aerodynamic data has prompted NASA and Hamilton Standard to pursue a program of wind tunnel experiments where both steady and unsteady blade surface pressure measurements would be made. This report covers the blade steady surface pressure testing that was carried out under the program in March of 1987, and is intended to present the experimental methods, the test data, and some preliminary comments on observed aerodynamic features.

### SR7 PROP-FAN DESCRIPTION

The SR7 Large Scale Advanced Prop-Fan, illustrated in figure 1, is a 2.74 meter (9 foot) diameter, eight bladed tractor configuration which was designed for 0.80 Mach number cruise speed at an altitude of 10,667 meters (35,000 feet), ISA. Additional fundamental design point parameters are:

Disc loading	259.6 kW/m <sup>2</sup>	(32 shp/d <sup>2</sup> )
Tip speed	243.8 m/s	(800 ft/s)
Advance ratio	3.06	
Power Coefficient	1.448	
Activity factor	227.3	
Integrated Design lift coeff.	0.191	

Rotation of the Prop-Fan is counter-clockwise as viewed from the rear looking forward. The hub to tip ratio is 0.24, and the blades incorporate NACA Series 65/CA airfoils from the root to the 36% radius and NACA Series 16 airfoils from the 52% radius to the tip, with "transition" airfoils in the remaining, middle, portion of the blade. The blade's mid-chord line sweeps back to a maximum of 36° at the tip station.

The SR7 Prop-Fan was designed for high efficiency and low noise while maintaining the necessary restrictions on blade stress, stability and frequency characteristics. Predicted aerodynamic and acoustic performance is summarized below in table 1. Additional information on the SR7 Prop-Fan design can be found in reference 1.

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TABLE 1

LAP/SR7 Aerodynamic and Acoustic Predicted Performance

Design/cruise condition:	
Efficiency	79.4 %
Peak Near-field noise*	143.0 dB
Take-off/climb	
Efficiency	51.6 %

\* At a radial distance 0.80 rotor diameters from the blade tip, at the blade passage frequency.

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TEST FACILITIES AND EXPERIMENTAL APPARATUS

Wind Tunnel

The blade surface pressure test was conducted in the 47 m<sup>2</sup> (506 ft<sup>2</sup>) transonic test section of the ONERA S1-MA wind tunnel in Modane, France.

Prop-Fan drive power was supplied by two gas turbine engines which were located approximately 5 meters (16.4 feet) downstream of the rotor plane. The power [1000 kW (1341 hp), maximum] was transmitted to the rotor through a series of mechanical couplings.

Diagrams of the wind tunnel and the test section with the Prop-Fan installation are shown in figures 2, 3 and 4. Note that the wind tunnel test section is nonsymmetrical and the tunnel and Prop-Fan axes were not coincident.

The wind tunnel stagnation conditions were measured in a settling chamber located upstream of the test section. The tunnel static pressure was measured on the wall of the test section in the Prop-Fan plane of rotation and was corrected according to flow survey data to provide the upstream static pressure for undisturbed inflow. The flow survey data were acquired by probing the flow field pressures parallel to the Prop-Fan axis and then subtracting theoretical body flow field effects.

With the tunnel static pressure and stagnation conditions known, the inflow Mach number and static temperature were determined from the one dimensional compressible flow functions.

### Prop-Fan Test Installation

The Prop-Fan was operated in a two bladed configuration as shown in figure 4; adoption of this configuration was necessitated by limitations in power available from the Prop-Fan drive engines. By running the system with two blades, full and over design power loading conditions were attainable on a per blade basis for inflow Mach numbers through 0.50.

The Prop-Fan was supported in the wind tunnel by a cable and rod system as shown in figures 3 and 4. Tests were performed to measure the vibration characteristics of the support system to assure structural integrity.

Prop-Fan drive power and blade angle were remotely controlled by test personnel in a control room adjacent to the wind tunnel test section. Blade angle measurements were made using a potentiometer system which was calibrated to the angular position of the blade shank.

### Pressure Tapped Blade

Collection of the blade surface pressure data was accomplished with the pressure tapped SR7 blade illustrated in figure 5. The blade was configured with thirteen radial stations of pressure taps on both face and camber sides. Sixteen pressure taps were distributed across the blade chord at each face side station, and twenty were distributed across each camber side station (with the exception of radial stations 12 and 13 where only 19 and 18 taps, respectively, were installed due to space limitations).

The pressure tap channels which span the blade were fabricated by bonding preshaped plastic skins to channelized adhesive film layers on each side of the blade. Each channel was connected to a tube imbedded in the root of the blade which led out to the blade shank.

This arrangement allowed for measurement of the surface pressures at one radial station at a time by sealing off the pressure taps at all of the stations except the one selected for measurements. This was done by applying a layer of 0.05 mm (0.002 in) thick tape over each dormant pressure tap station, with an additional wrap-around strip at the leading edge to improve the integrity of the tape seal at high speeds.

The pressure taps were formed in the plastic skin layers by using a punching process which provided very clean and consistent  $0.51 \pm 0.03$  mm ( $0.020 \pm 0.001$  in) diameter holes. The geometry of a typical channel and pressure tap is shown in figure 6; note that the taps had slightly tapered walls. The spatial arrangement of the pressure taps on the blade surface, shown in figure 7, was such that the taps were concentrated in areas where large pressure gradients were expected, i.e., in the leading edge and tip areas. Each radial station was oriented approximately on the predicted blade flow streamlines for the design cruise condition.

Utilization of the skin cladding approach described above resulted in an increase in blade thickness of  $0.64 \pm 0.13$  mm ( $0.025 \pm 0.005$  inch) from the design thickness - this amounts to a  $4.7 \pm 0.9\%$  increase in the airfoil section thickness ratio (mid chord thickness/chord) at the 75% blade span. A leading edge fiberglass wrap which was used to lock the skins in place resulted in a  $0.20 \pm 0.05$  mm ( $0.008 \pm 0.002$  inch) increase in the leading edge radii. The transition from the leading edge radii to the airfoil surfaces was accomplished by a smooth blend. Due to space restrictions in the extreme root area of the airfoil, where the tubes were connected to the channels, the airfoil thickness increase was larger; at radial station 1 the increase in airfoil thickness was  $2.41 \pm 0.25$  mm ( $0.095 \pm 0.010$  inch).

The spatial coordinates of each of the 465 pressure taps were measured for use in the data reduction process. The coordinate system that was used and the pressure tap coordinate data are given in appendix A.

### Pressure Measurement Apparatus

The pressure data were acquired with a Scanivalve<sup>TM</sup> system which was mounted on the front of the Prop-Fan dome, and due to space limitations, was allowed to protrude through the nose of the spinner. The protruding portion was shrouded, and the pneumatic and electrical control cables for the system were led forward and down through an aerodynamically faired mast, to the floor of the wind tunnel as shown in figure 4.

The Scanivalve consisted of rotating and nonrotating portions with a single differential pressure transducer at the centerline of the nonrotating section. The differential pressure transducer was exposed sequentially to each tube from the blade on one side while referencing the tunnel static pressure on the other side.

Control of the Scanivalve was accomplished remotely through a microcomputer link with the Scanivalve control system. The microcomputer was used to command the scanning sequences, record the pressure data, record the Prop-Fan and wind tunnel operating parameters, and provide preliminary on-line pressure coefficient plots for each measurement run.

## TEST PROCEDURE AND OPERATING CONDITIONS

Table 2 lists the range of operating conditions that were run during the test along with values of maximum variation of the parameters for any two radial stations. The table is ordered by increasing Mach number and subordered by increasing power coefficient. The point numbers, given at the left in the table, refer to the operating condition numbers specified in the test plan (reference 2).

The basic format of the experiment consisted of selecting a radial station for testing and then stepping through the test points in the same order as table 2, collecting the data at each point.

In general, the procedure for setting a specific test point was to set inflow Mach number and then adjust the rotor speed and blade angle, to obtain a desired power coefficient. This procedure assured good power coefficient matches for all of the radial stations and resulted in minimal station to station variation of Mach number and advance ratio.

After establishing the operating condition, the basic wind tunnel and Prop-Fan parameters (tunnel static temperature and pressure, Mach number and rotor speed) were logged into the microcomputer, a record number was assigned for filing purposes, and the Scanivalve was activated. The Scanivalve then ran through a calibration sequence followed by the pressure data scan. The data were then plotted in preliminary form and reviewed; if the data contained questionable features, a second scan was performed or hand scanning of individual suspicious points was made.

The first four test points in table 2 approximate static propeller conditions of increasing power and were selected to provide information on leading edge vortex flow (there was no applied tunnel flow for these points, although there was some Prop-Fan induced circulation in the tunnel). The 0.20 Mach number cases were selected to investigate take-off conditions; the three

runs at 0.50 Mach number cover a wide range of power loading conditions and include a case at the design cruise power coefficient per blade. The remaining four test points were selected to investigate transonic blade flow characteristics and were all of relatively low power coefficient due to rig limitations.

TABLE 2  
Operating Conditions for the Test

Point Number	Nominal Mach Number, $M_\infty$	Advance Ratio, $J$	Power coeff., $CP$	Blade Angle, $\beta$
1	0.030 $\pm 0.015$	0.123 $\pm 0.062$	0.080 $\pm 0.002$	14.1 $\pm 0.6^\circ$
2	0.030 $\pm 0.015$	0.123 $\pm 0.062$	0.095 $\pm 0.003$	15.2 $\pm 0.8^\circ$
3	0.030 $\pm 0.015$	0.184 $\pm 0.062$	0.154 $\pm 0.004$	19.4 $\pm 0.8^\circ$
4	0.030 $\pm 0.015$	0.185 $\pm 0.061$	0.205 $\pm 0.003$	22.2 $\pm 0.6^\circ$
5	0.200 $\pm 0.001$	0.880 $\pm 0.005$	0.100 $\pm 0.002$	26.6 $\pm 1.0^\circ$
6	0.200 $\pm 0.001$	0.883 $\pm 0.009$	0.250 $\pm 0.001$	31.3 $\pm 0.9^\circ$
9	0.500 $\pm 0.001$	3.071 $\pm 0.013$	0.110 $\pm 0.004$	51.8 $\pm 0.9^\circ$
8	0.500 $\pm 0.001$	3.067 $\pm 0.009$	0.361 $\pm 0.005$	55.1 $\pm 0.8^\circ$
7	0.500 $\pm 0.001$	3.083 $\pm 0.008$	0.642 $\pm 0.009$	58.5 $\pm 1.0^\circ$
10*	0.600 $\pm 0.002$	3.078 $\pm 0.007$	0.230 $\pm 0.006$	54.5 $\pm 1.3^\circ$
11*	0.700 $\pm 0.002$	3.064 $\pm 0.012$	0.228 $\pm 0.006$	54.5 $\pm 1.3^\circ$
13*	0.780 $\pm 0.002$	3.209 $\pm 0.014$	0.111 $\pm 0.005^\dagger$	54.5 $\pm 1.3^\circ$
12*	0.775 $\pm 0.005$	3.088 $\pm 0.012$	0.227 $\pm 0.003$	54.6 $\pm 1.3^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

\* Radial stations 2,4 and 10 were not run at this condition.

$^\dagger$  Variation range does not include the radial station 13 case where  $CP = .157$ .

## DATA REDUCTION

### Measured and Corrected Pressures

As mentioned above, the pressures that were measured by the Scanivalve system and recorded by the microcomputer were differential pressures and can be written

$$\Delta P_{\text{scani}_{ij}} = P_{m_{ij}} - P_{\infty} \quad (1)$$

where,  $i$  = radial station number (see figure 7),  
 $j$  = pressure tap channel number (see figure 7),  
 $P_{m_{ij}}$  = the pressure corresponding to tap  $ij$  on the blade and sensed on the measurement side of the Scanivalve differential pressure transducer,  
and  $P_{\infty}$  = the tunnel static pressure (sensed on the reference side of the transducer).

Rotation of the Prop-Fan results in an acceleration field which acts on the air in the blade's spanwise pressure tap channels and tubes leading to the Scanivalve. This effect produces a pressure deficit at the transducer relative to the blade surface pressure at a given tap. Provided the rotor speed is constant and there are no leaks in the system, a steady state (or no-flow) condition is satisfied, and a correction for the acceleration effect can be derived as follows:

From the laws of fluid statics, the pressure gradient in the column of air leading from the blade to the Scanivalve is

$$\frac{dP}{dr} = \rho \Omega^2 r. \quad (2)$$

where  $\rho$  is the air density and  $\Omega$  is the angular speed of the rotor.

Using the ideal gas law and writing in integral form gives

$$\int_{P_{m_{ij}}}^{P_{ij}} \frac{dP}{P} = \frac{\Omega^2}{RT} \int_{r_{ij}}^{r_{ij}} r dr \quad (3)$$



where,  $P_{ij}$  = the static pressure at tap  $ij$ ,

$R$  = the gas constant for air,

$T$  = the absolute temperature in the channel (which is assumed to equal the tunnel static temperature,  $T_\infty$ ),

and  $r_{ij}$  = the radial distance from the Prop-Fan axis of rotation to tap  $ij$ .

Upon integrating and rearranging equation 3, the static pressure at tap  $ij$  (or corrected measurement pressure) can be written.

$$P_{ij} = P_{m_{ij}} \exp(\Omega^2 r_{ij}^2 / 2RT_\infty). \quad (4)$$

#### Radial Distance to the Pressure Taps

In order to use equation 4 precisely one must include the dependence of the radial distance to the pressure taps,  $r_{ij}$ , on blade pitch angle and on blade deflections. Blade deflection information of the detail required here is not available and the effect (of blade deflections) on the results can be shown to be relatively small. Therefore  $r_{ij}$  is assumed to be a function of blade pitch angle only, and can be written:

$$r_{ij} = \sqrt{x_{ij}^2 - [y_{ij}^2 + z_{ij}^2] \cos^2[\arctan(z_{ij}/y_{ij}) + \beta]} \quad (5)$$

A derivation of this equation and definition of the coordinate system used in describing the pressure tap locations are given in appendix A. Further discussion of the effect of blade deflections on the data is given in the section on measurement uncertainty.

#### FORMAT OF THE DATA

The data presented in this report are given in pressure coefficient form. The definition of the pressure coefficient is

$$C_{p_{ij}} = \frac{P_{ij} - P_\infty}{q_{ij}} \quad (6)$$

where  $q_{1j}$  is a dynamic pressure which may be chosen arbitrarily.

The principal definition of the dynamic pressure in this report is

$$q_{1j} = \frac{1}{2}\rho(V_{\infty}^2 + \Omega^2 r_{1j}^2) \quad (7)$$

where  $V_{\infty}$  is the inflow velocity. This definition of dynamic pressure provides a pressure coefficient normalization on a tap by tap basis, which is desirable in that it permits comparison with two dimensional data and it gives a consistent amplitude range for all of the data when plotting. However, actual surface pressures at successive radial stations for a fixed operating condition based on this type of normalization, cannot be directly compared.

In order to make a station by station loading comparison, a constant normalization is used. In this report blade surface pressure maps are given for some special cases with the dynamic pressure defined as follows:

$$q_{1j} = q_{4\{\text{mid chord}\}} = \frac{1}{2}\rho(V_{\infty}^2 + \Omega^2 r_{4\{\text{mid chord}\}}^2) \quad (8)$$

where the subscripts  $4\{\text{mid chord}\}$  refer to the mid chord point at radial station 4.

#### DISCUSSION OF THE TECHNICAL DIFFICULTIES ENCOUNTERED

Before reviewing the data, three basic test problems must be addressed, each of which had some effect on the data presented in the remaining sections of the report. The problems are as follows in order of severity:

1. particle impacts resulting in failure of the tape seal over rows of dormant pressure taps or resulting in venting of individual channels,
2. crack formation in the plastic skin which sealed the channels on the blade surface,
3. reference pressure transients which interrupted the scan sequence.

Particle impacts on the steady pressure blade occurred on several occasions during the test. In most cases the impacts resulted in little or no damage, however, four cases of damage to the tape which seals the dormant rows of pressure taps occurred and two cases of channel venting occurred due to direct particle impingement on a specific channel. The data affected by tape seal failure were limited to radial stations 3, 6, 11 and 13 at Mach numbers generally greater than 0.20. Channel venting due to direct particle impact resulted on channels 26 and 29 and were repaired following the runs in which they occurred. The data that were compromised by impact events have been eliminated from the final data package.

Prior to the second test run (radial station 13) a series of cracks was found in the camber side plastic skin layer, between radial stations 6 and 8, and 9 and 10, on the blade. The cracks, which are believed to have been catalyzed by the application of a cleaning solvent that "shocked" and embrittled the plastic, were not present following the first run (radial station 5); they were found immediately after applying the solvent. Continued blade inspection showed high leak rates on channels 2 through 8. To correct the leak problem a series of tape strips was applied to the cracked areas, sealing them off and establishing acceptable leak rates. Testing continued with this configuration and leak rates were monitored following approximately every other run. The fix was found to be satisfactory on all channels, although channel 2 required further repair as the test progressed. In general this problem is not considered to have compromised the data significantly.

Reference pressure (equal to the tunnel static pressure) transients occurred during several data scans. Fortunately this phenomenon was quite evident in the on-line pressure coefficient plots, so scans that were affected were either rerun entirely or hand scanned to pick up the affected points. Therefore this problem is considered to be of minimal consequence to the data.

## RESULTS AND DISCUSSION

The entire data package is given in appendix B in figures B1 through B13. Each figure corresponds to a specific operating condition, and contains all of the data acquired at that condition in terms of plots for each radial station, of pressure coefficient (based on equations 6 and 7) versus blade chord. The figures are presented in order of increasing Mach number, and are subordered by increasing power coefficient (as in table 2).

Each plot is accompanied by two pages of additional information which include:

1. details of the wind tunnel and Prop-Fan operating conditions,
2. radius ratio of the mid-chord point of the radial station, relative to the mid-chord point at the blade tip,
3. blade chord length,
4. relative Mach number at the mid-chord point of the station based on inflow and tangential velocity components,
5. corrected surface pressure, dynamic pressure (based on equation 7) and pressure coefficient numerical data corresponding to the plot.

For consistency all of the plots are given at the same scale; this results in some cases where the data go off scale, but in such cases the reader may resort to the tabulated data.

Additional plots are given for the high power case at 0.20 Mach number and for each of the 0.50 Mach number cases. These plots, given in figures 10 and 11a, b and c, and show the relative pressure loading for the entire blade.

### Static Rotor Cases

Figures B1 through B4, which correspond to the first four test points in table 2, approximate static rotor conditions of increasing power. By definition the inflow Mach number is zero for static rotor conditions; in the case of the subject conditions Prop-Fan generated tunnel flow resulted in slightly non-zero inflow Mach numbers, hence the reference to "approximate" static rotor conditions.

Caution must be exercised when reviewing these data as relatively large Mach number (and therefore advance ratio) variations were experienced at successive radial stations. These variations ( $M_\infty = 0.01$  to  $0.04$ ) were found to occur from day to day and may have been related to changing atmospheric conditions or to loss of a section of a honeycomb flow straightening partition upstream of the test section, which was observed near the end of the test.

Upon discovering an appreciable discrepancy in pressure distribution trends at neighboring radial stations, despite good matches in power coefficient, an experiment was performed to provide pressure data repeatability information related to the Mach number variation effect. The experiment consisted of

remeasuring the blade surface pressures at radial station 7 for test points 2 and 4. Care was taken to assure that the tape configuration in the vicinity of the measurement station was precisely the same as that of the original measurements and to assure that no adverse blade surface conditions had developed during the interim between the original and new measurements (3 days).

The results of the experiment are given in figure 8 and show a remarkable discrepancy compared to the original data, which is included for reference. These results indicate extreme sensitivity of the blade pressure distribution to changes in inflow conditions when operating at near static rotor conditions.

Some observed aerodynamic features from the pressure coefficient data for the static rotor cases are given below.

For the two low power cases, a discrete lump of suction is found on the camber side of the blade at radial station 13 (figures B2.13 and B3.13). This suction is probably due to roll-up of the blade tip vortex onto the camber surface. As the power is increased the suction peak moves forward and at the highest power case of figure B4.13, the effect disappears, giving way to flow separation.

For the high power cases of figures B3 and B4, evidence of leading edge vortex flow is apparent at the stations with leading edge sweep. The evidence here being the large suction peak at the 5 to 15% chord point on the camber side of the airfoil. Leading edge vortex flows have been reported to exist on Prop-Fan blades at high angles of attack (references 3 and 4). Such flows are driven by leading edge sweep and produce a phenomenon known as vortex lift which is caused by additional suction resulting from the low pressure in the vortex.

#### 0.20 Mach Number Inflow Cases

Figures B5 and B6 contain all of the data acquired at 0.20 Mach number; the high power case of figure B6 is intended to represent the take off condition. The data at these test conditions are well behaved and do not contain the repeatability problem that occurred during the static rotor testing. The repeatability of the data for these conditions is illustrated in figure 9.

Aerodynamic features of interest in the 0.20 Mach number data are, as in the static rotor cases, tip vortex flow at low power and leading edge vortex flow at the high power condition on the swept back radial stations.

Figure 10 shows the relative pressure loading at each radial station on the blade for the take off condition (equations 6 and 8 were used to provide a constant pressure coefficient normalization), illustrating the comparatively large loading at the outboard radial stations and evidence of leading edge vortex flow, which appears to bend chordwise across the blade in the area of radial stations 8 through 10, resulting in an abrupt change in the loading characteristics through that region.

#### 0.50 Mach Number Inflow Cases

The pressure coefficient data for the 0.50 Mach number cases, which cover power coefficient settings of 0.11, 0.36 and 0.65, are given in figures B7 through B9.

By dividing the design cruise power coefficient for the eight bladed system by 4, one obtains an approximate design power coefficient of 0.362 for the two bladed configuration, so the range of power conditions tested at 0.50 Mach number includes the approximate design power loading per blade. This condition was not attainable at the higher Mach numbers investigated.

Figures 11a, b and c show the relative pressure loading for each of the 0.50 Mach number cases. The sequence of these figures show the effect of increasing power coefficient while holding advance ratio (nearly) constant.

In the low power case it is observed that the pressure loading is reversed along the leading edge of the inboard radial stations, this behavior is characteristic of low section angles of attack. At the design cruise power loading case, suction from tip vortex roll-up is observed.

In the high power case shock wave existence is observed at the two percent chord point on the camber surface of the airfoil, at radial stations 6 and 7. The existence of the shock is based on an approximate calculation of the section critical pressure coefficient, above which the flow becomes supersonic, and the observation of an abrupt increase in pressure at the indicated location on the blade. The critical pressure coefficient calculation used is based on one dimensional compressible flow relations and gives values of -1.01 and -0.93 for radial stations 6 and 7, respectively.

#### 0.60, 0.70 and 0.78 Mach Number Inflow Cases

The pressure coefficient data for the remaining high inflow Mach number cases are given in figures B10 through B13. These data were the most severely effected by the particle impact problems mentioned earlier, and therefore contain the greatest amount of missing data.

The tunnel flow became significantly unsteady for Mach numbers in the 0.77 - 0.78 range. The magnitude of the tunnel static pressure fluctuations resulting from the unsteady flow components and their affect on advance ratio (via RPM variations) are illustrated in figure 12. Note the approximate 2 second lag of the advance ratio response to the inflow fluctuations, this occurs since the rotor speed takes time to adjust to the changes in inflow velocity corresponding to the pressure fluctuations.

Operating parameter fluctuations versus Scanivalve channel number were recorded on magnetic tape for each run. This information will allow for a more rigorous data reduction in the future where the parameters can be updated for each data point. However, in this report average quantities were used to simplify the analysis.

The pressure distributions for these high inflow Mach number cases exhibit some important effects: the outboard-most radial stations for these cases were operating at relative Mach numbers very near unity and the camber side flow typically became supersonic (pressure coefficients less than the critical value). The pressure loading is found to move aft on the blade chord with increasing relative Mach number and in several cases a substantial pressure differential between the face and camber sides, is found at the taps closest to the trailing edge (see for example, figures B13.5 through B13.10). These pressure differentials may be associated with trailing edge shock waves.

### MEASUREMENT UNCERTAINTIES

In order to develop an accurate assessment of the uncertainties in any measurement data, the principal contributing factors must be well understood. In the case of the pressure coefficient data, most of the sources of measurement error are identifiable and may be assigned specific values with confidence. However, there are elements of the experiment that produced uncertainties which are more difficult to quantify; these are:

1. Variation of the temperature of the air in the spanwise blade channels from the assumed tunnel static temperature, resulting in errors in the air column acceleration corrections.
2. Blade deflections, resulting in slightly larger radial distances  $r_{ij}$ , than those used based on the rigid blade assumption.
3. Interference of the flow over the blade surface due to the tape layers that were applied to seal the cracks in the skin cladding, mentioned earlier.

To address the problem of evaluating the measurement uncertainties, first an analysis was made to provide typical values of uncertainty for the pressure coefficient data, based on the established limitations of measurement uncertainty, and second, a study was made to show the effect of items 1 and 2, above.

The uncertainty analysis was focused on the data from radial station 5 where a range of operating conditions was considered. Average uncertainty values were computed for the pressure coefficients of the selected operating conditions based on the 36 data points for the station, using the method which follows.

From reference 5, the uncertainty of a computed function  $f = f(x_1, x_2, \dots, x_n)$  with known uncertainties  $u_1, u_2, \dots, u_n$  of the independent variables can be written

$$U_f = \left[ \sum_{k=1}^n \{u_k \partial f / \partial x_k\}^2 \right]^{\frac{1}{2}}. \quad (9)$$

To determine the uncertainty in the computation of the pressure coefficients, based on equations 6 and 7,  $f$  is replaced by  $C_{p_{ij}}$  where

$$C_{p_{ij}} = C_{p_{ij}}(P_{m_{ij}}, P_{\infty}, T_{\infty}, \Omega, r_{ij}, \beta, M_{\infty}).$$

Table 3, below, gives the uncertainties of the independent variables and the resulting computed uncertainties of the pressure coefficients from radial station five. In addition, measurement uncertainty ratios for advance ratio and power coefficient, which are Mach number dependent, are given.

It is evident from table 3 that all of the measurement uncertainties decrease with increasing Mach number. The uncertainties of the pressure coefficients, as expected, follow this trend as well. However, the pressure coefficient levels are typically highest for the low Mach number cases, so the percent of uncertainty tends to be less dependent upon Mach number and is relatively constant.

In general the pressure coefficient uncertainty levels determined from the method above are considered to be acceptable, posing little question in the validity of the data.



TABLE 3

Measurement Uncertainties

Measurement Uncertainties of the Independent Variables for the Pressure Coefficient Calculation:

Quantity:	Uncertainty:
Measurement Pressure, $P_{m_{1j}}$ .....	$\pm 138$ pa (0.020 psi)
Tunnel Static Pressure, $P_{\infty}$ .....	$\pm 60$ pa (0.0087 psi)
Tunnel static Temperature, $T_{\infty}$ ...	$\pm 0.5$ k (0.9 F)
Rotor Speed, $\Omega$ .....	$\pm 0.10$ rad/s (1.0 RPM)
Radial distance, $r_{1j}$ .....	$\pm 0.0015$ m (0.060 in)
Blade Angle, $\beta$ .....	$\pm 1.0$ degree
Mach Number, $M_{\infty}$ .....	$\pm 0.0125$ for $M_{\infty} = 0.05$
	$\pm 0.0032$ for $M_{\infty} = 0.20$
	$\pm 0.0015$ for $M_{\infty} = 0.50$
	$\pm 0.0013$ for $M_{\infty} = 0.70$
	$\pm 0.0013$ for $M_{\infty} = 0.80$

Operating Conditions and Computed Average Uncertainties for  $C_{p_{1j}}$  at Radial Station 5:

Point number	3	6	8	11	13
Mach number, $M_{\infty}^{\dagger}$	0.02	0.20	0.50	0.70	0.78
Advance Ratio, $J$	0.122	0.884	3.058	3.052	3.077
Power Coefficient, $CP$	0.150	0.250	0.360	0.228	0.224
Uncertainty of Pressure Coefficient, $U_{Cp}$	$\pm 0.020$	$\pm 0.019$	$\pm 0.012$	$\pm 0.008$	$\pm 0.007$

$\dagger$  Uncertainty values for  $M_{\infty} = 0.02$  and  $0.78$  were assumed to equal those given above for  $M_{\infty} = 0.05$  and  $0.80$ , respectively.

Advance Ratio and Power Coefficient Uncertainty Ratios:

Mach Number, $M_{\infty}$	$u_J/J$	$u_{CP}/CP$ (for $CP = 0.250$ )
0.20	$\pm 0.0170$	$\pm 0.0055$
0.50	$\pm 0.0038$	$\pm 0.0042$
0.70	$\pm 0.0025$	$\pm 0.0038$
0.80	$\pm 0.0023$	$\pm 0.0036$

To investigate the effects of air column temperature and blade deflections on the pressure coefficient data, studies were made where, first, the air column temperature was assumed to be 5% greater than the tunnel static temperature and second, the radial distances to the pressure taps were assumed to be 1% greater than those used in the unmodified data reduction.

Plots showing the effects of these parameter adjustments are given in figures 13 and 14. The 5% air column absolute temperature adjustment, which is conceivable since the blade is warmed by the hydraulic oil in the Prop-Fan pitch change actuator and ram air effects, is found to have a small effect on the pressure coefficients, and the 1% increment in the pressure tap radial distances is found to result in almost no change in the pressure coefficients, especially for low inflow Mach numbers. The adjustments made in these studies are believed to be significantly larger than the actual parameter deviations, so any errors resulting from these effects should be very small.

### CONCLUSIONS

1. Steady pressure distributions were successfully measured on the blade surface at all of the 13 radial stations for Mach numbers of 0.03, 0.20 and 0.50, and at all radial stations except 2, 4 and 10 for Mach numbers of 0.60, 0.70 and 0.78.
2. An uncertainty analysis was performed which demonstrates that the measurement errors and uncertainties are acceptable.
3. Studies of the sensitivity of the correction for centrifugal loading, on the column of air in the blade's pressure tap channels, showed that the assumptions used in processing the data were valid.
4. During operation at approximate static rotor conditions the inflow Mach number was  $0.03 \pm 0.015$ , where  $\pm 0.015$  is the maximum station by station variation in the Mach number. The pressure distributions were found to be very sensitive to Mach number for these conditions, so some respective station by station pressure distribution inconsistencies exist in these data.
5. Evidence of tip edge and leading edge vortex flows were found in the static rotor data and the 0.20 Mach number data.
6. Shook waves were present near the leading edge of the blade at radial stations 6 and 7 during high power operation at 0.50 inflow Mach number.

7. The chordwise pressure loading is found to move aft with increasing relative Mach number for the 0.60, 0.70 and 0.78 Mach number cases.
8. Evidence of trailing edge shock waves is present at the outboard radial stations in the 0.70 and 0.78 Mach number data.

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1. Sullivan, W., Turnberg, J., Violette, J., "Large-Scale Advanced Prop-Fan (LAP) Blade Design," NASA Lewis Contract NAS3-23051, NASA CR-174790, Date ?
2. Plan of Test 267X-135, revision D.
3. Hanson, D. B., "Propeller Noise Caused by Blade Tip Radial Forces," AIAA Paper No. 86-1892, 1986.
4. Vaczy, C. M. and McCormick, D. C., "A Study of the Leading Edge Vortex and Tip Vortex on Prop-Fan Blades," ASME Paper No. 87-GT-234, 1987.
5. Hoffman J. P., "Experimental Methods for Engineers," 3d ed., McGraw-Hill Book Company, New York, 1978.

## LIST OF SYMBOLS

CP	- Power coefficient = (Power absorbed)/ $\rho(2\pi\Omega)^3(2r_t)^5$
Cp <sub>ij</sub>	- Pressure coefficient for tap ij
i	- Radial station number, i = 1 through 13, root to tip
j	- channel number, j = 1 through 20 on camber side, 21 through 36 on face side; ordered from leading edge to trailing edge.
J	- Advance ratio = $V_\infty\pi/\Omega r_t$
M <sub>∞</sub>	- Inflow Mach number
P <sub>∞</sub>	- Tunnel static pressure, Pa (psi)
Pm <sub>ij</sub>	- Measured pressure for tap ij, Pa (psi)
P <sub>ij</sub>	- Corrected pressure for tap ij, Pa (psi)
q <sub>ij</sub>	- Dynamic pressure at tap ij, Pa (psi)
r <sub>ij</sub>	- Radial distance from Prop-Fan centerline to tap ij, m (in)
r <sub>t</sub>	- rotor radius (based on tip, mid-chord point), m (in)
R	- Gas const. for air = 287.074 J/kg°K (53.35 ft lbf/°R lbm)
T <sub>∞</sub>	- Tunnel static temperature, °K (°F)
u <sub>k</sub>	- measurement uncertainty for parameter, k
V <sub>∞</sub>	- Inflow velocity, m/s (ft/s)
x/c	- nondimensional blade chord
x <sub>ij</sub>	- x coordinate for pressure tap ij cm (in)
y <sub>ij</sub>	- y coordinate for pressure tap ij cm (in)
z <sub>ij</sub>	- z coordinate for pressure tap ij cm (in)
β	- Blade angle at x = 104.1 cm (41.00 in) station, degrees
Ω	- rotor speed, radians/second
ρ	- Air density kg/m <sup>3</sup> (lbf/ft <sup>3</sup> )

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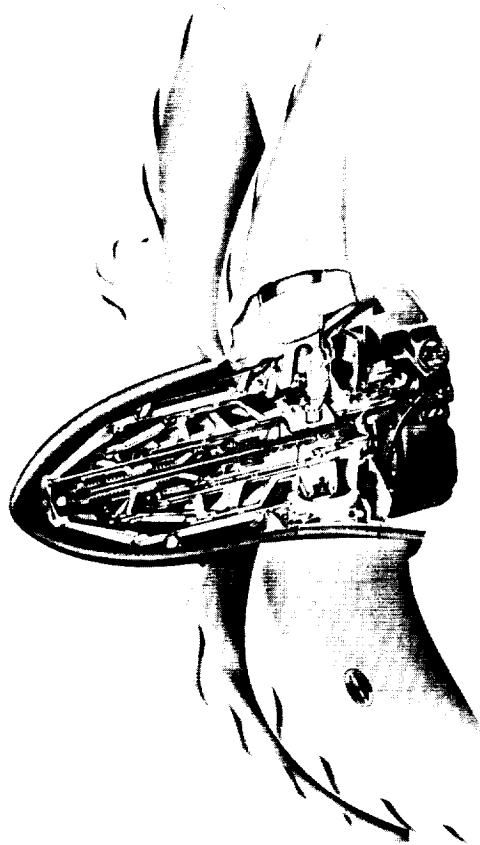


FIGURE 1. - LAP/SR7 PROP-FAN.

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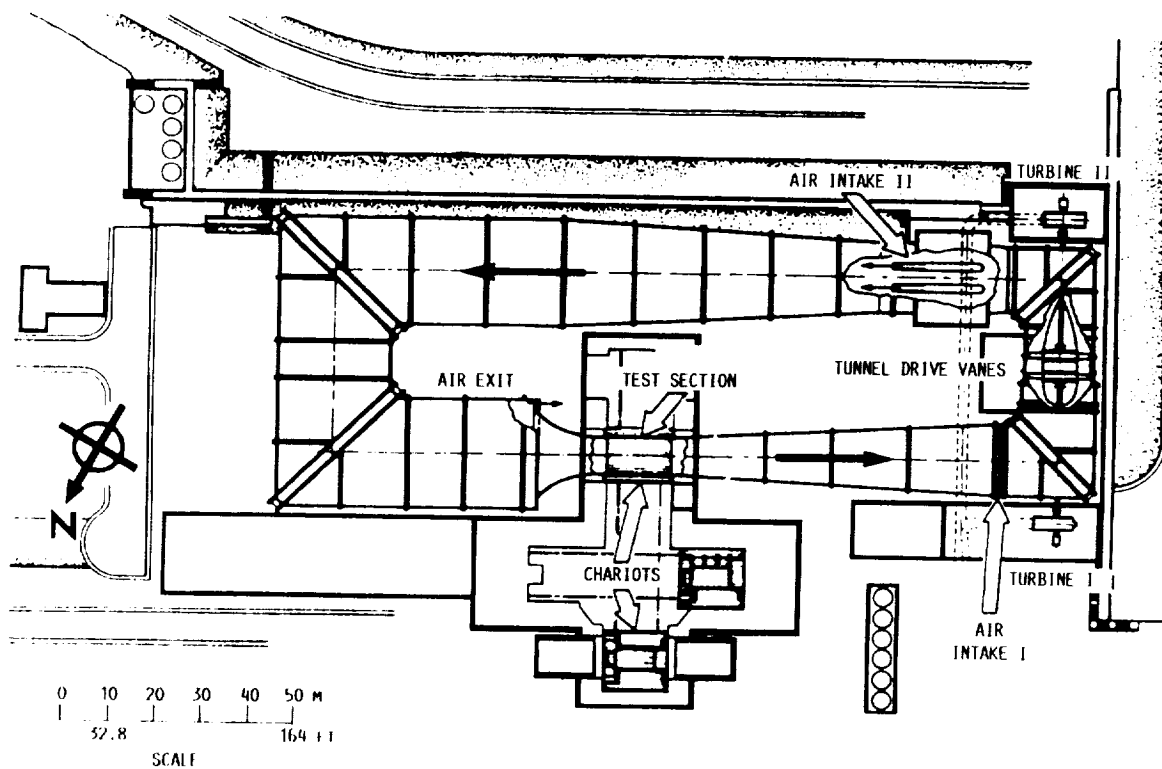


FIGURE 2. - ONERA S1-MA WIND TUNNEL.

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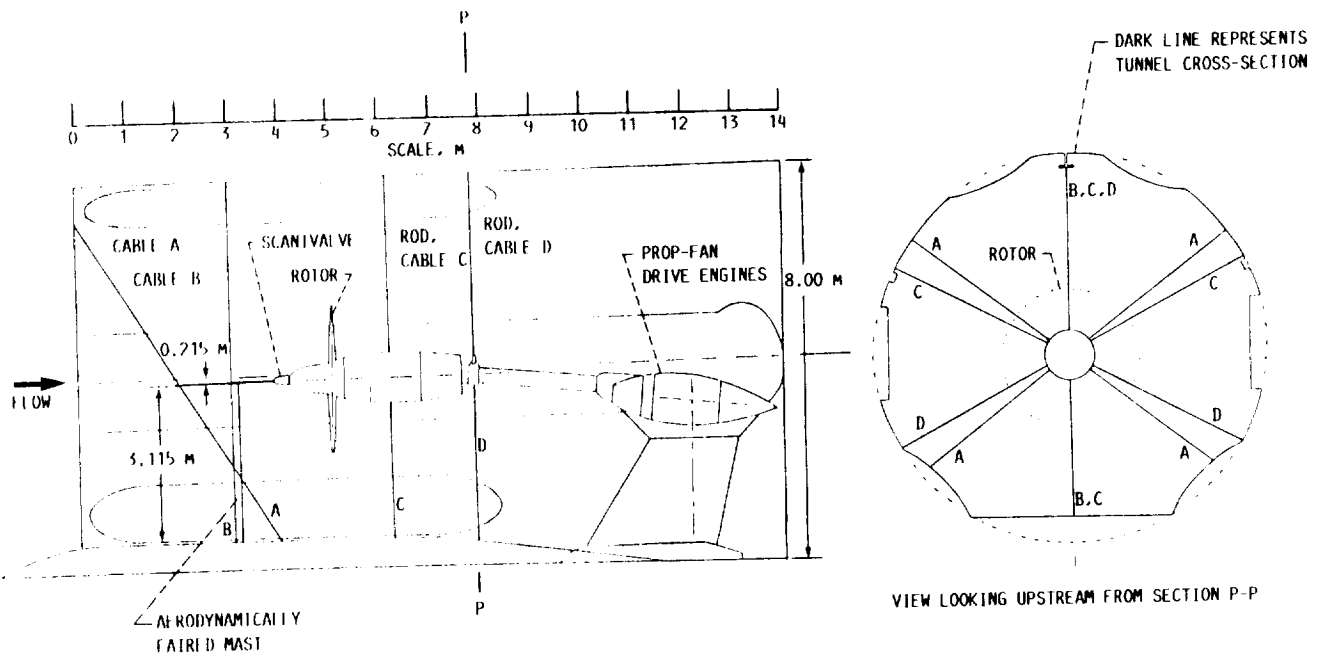


FIGURE 5. - PROP-FAN INSTALLATION IN THE S1-MA TRANSONIC TEST SECTION.

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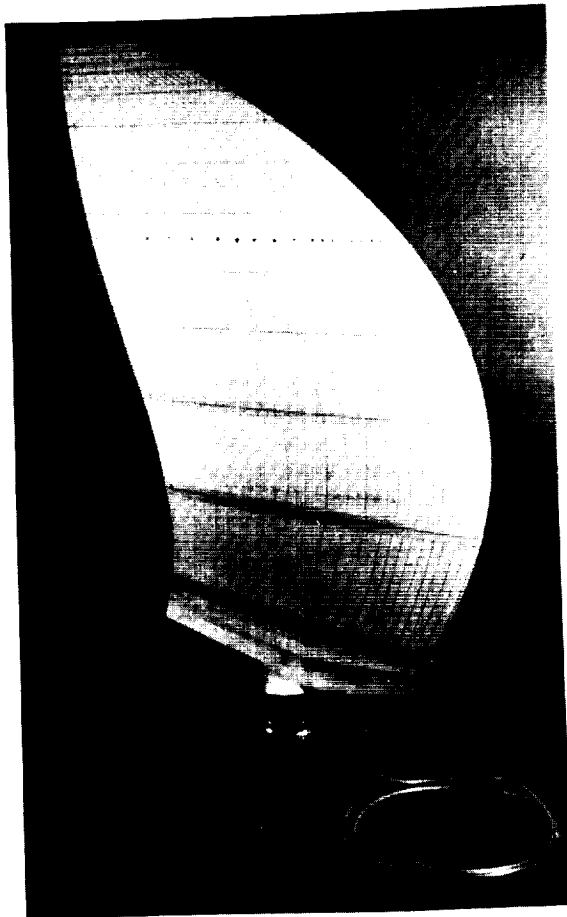


FIGURE 4. - SR7 PROP-FAN INSTALLATION IN THE S1-MA  
TRANSONIC TEST SECTION.

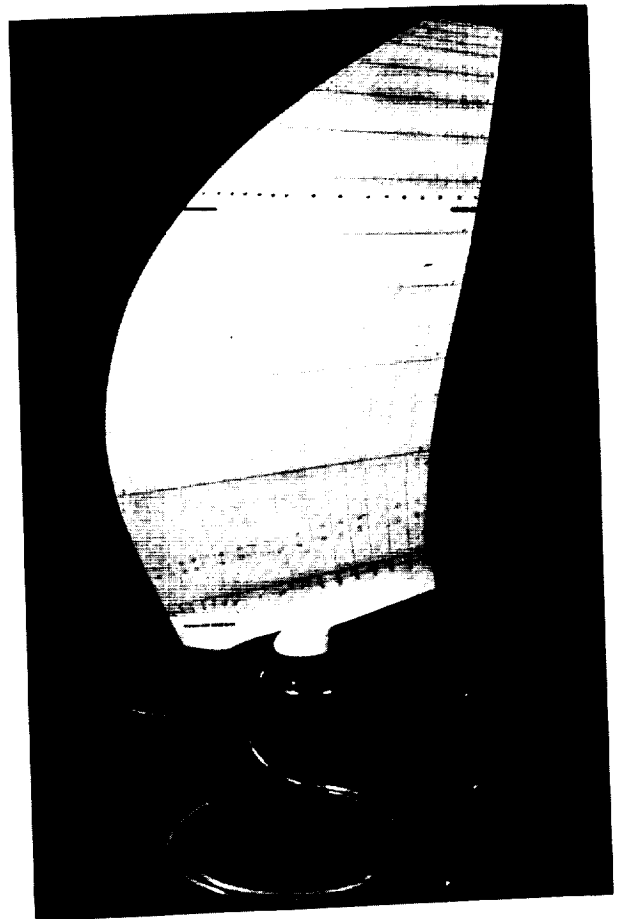
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CAMBER SIDE



FACE SIDE

FIGURE 5. - SR7 PRESSURE TAPPED BLADE.

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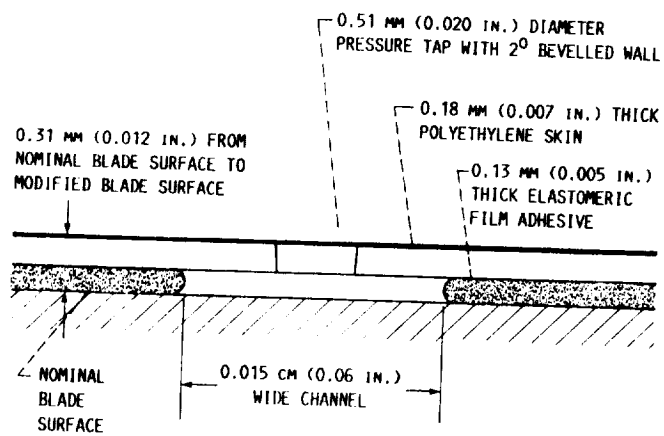


FIGURE 6. - TYPICAL PRESSURE TAP - CHANNEL CONFIGURATION. NOMINAL DIMENSIONS GIVEN.

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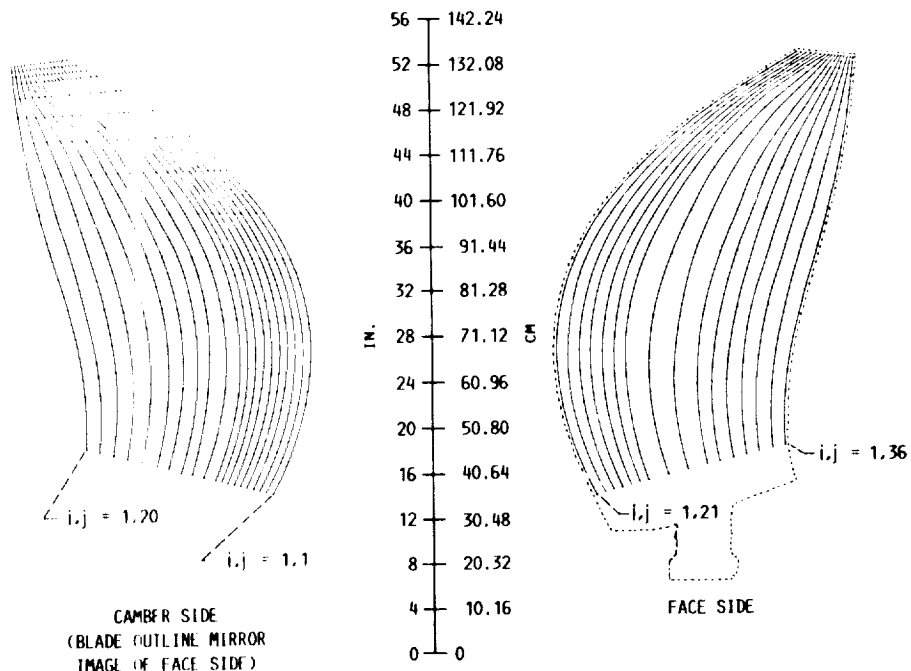


FIGURE 7 - ARRANGEMENT OF THE PRESSURE TAPS ON THE BLADE SURFACE - PROJECTED VIEW.  
(NOTE: THE VERTICAL SCALE REPRESENTS THE DISTANCE ALONG THE BLADE PITCH CHANGE  
AXIS FROM THE PROP-FAN CENTERLINE.)

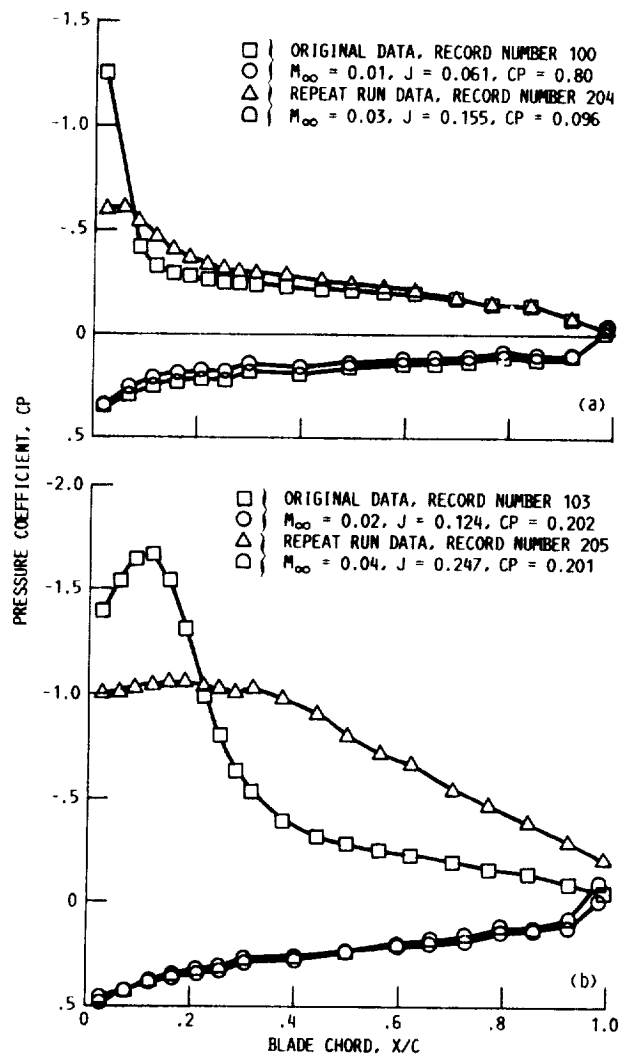


FIGURE 8. - DEMONSTRATION OF MACH NUMBER VARIATION EFFECT ON PRESSURE COEFFICIENTS AT LOW MACH NUMBERS (STATIC ROTOR CASES).

# RADIAL STATION 8

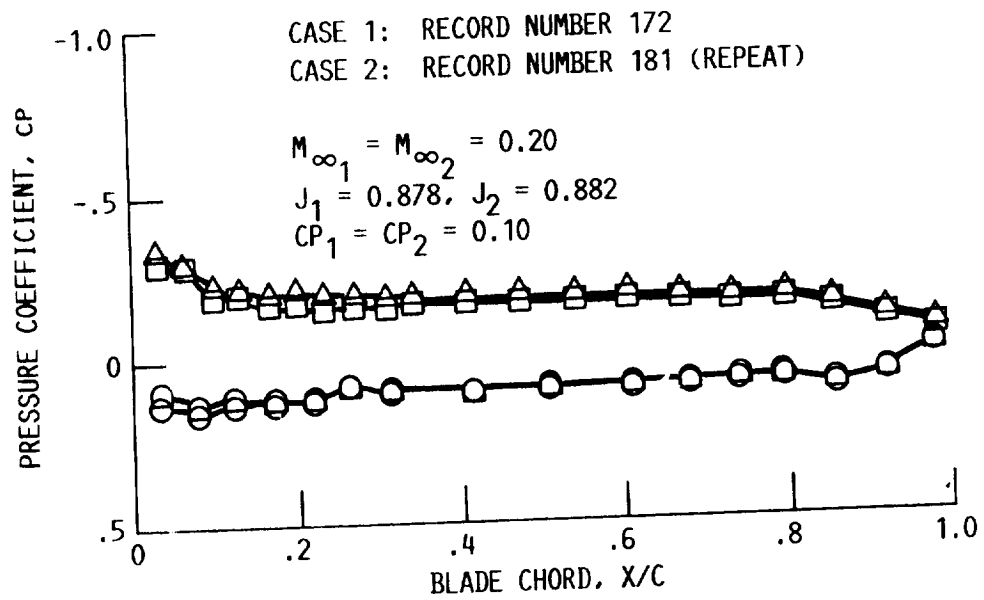
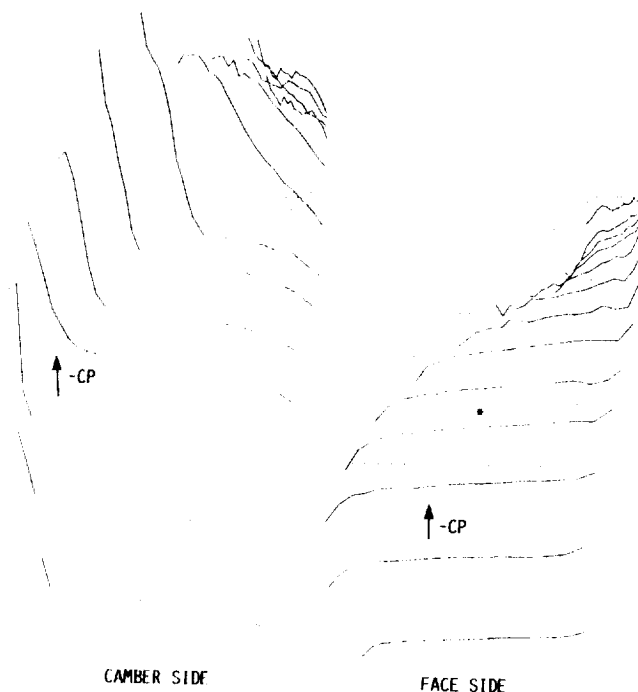


FIGURE 9. - DEMONSTRATION OF THE REPEATABILITY OF THE PRESSURE COEFFICIENT DATA AT  $M_0 = 0.20$ .

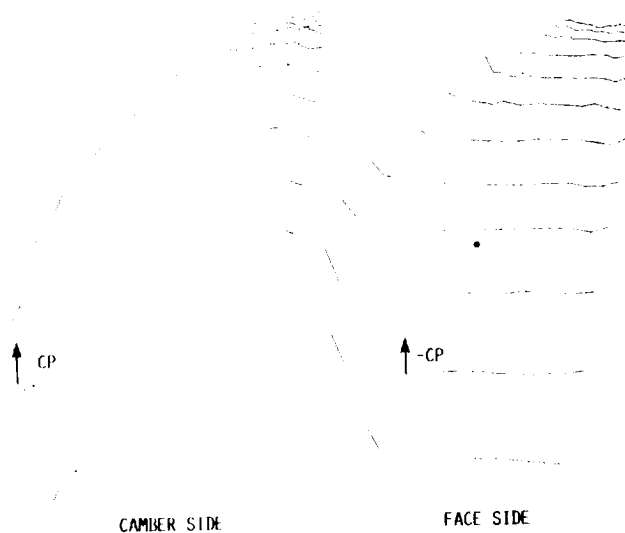
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\* INDICATES THE MID-CHORD POINT OF RADIAL STATION 4 (WHERE THE CONSTANT VALUE OF DYNAMIC PRESSURE WAS COMPUTED FOR NORMALIZATION OF THE CURVES). SCALING MAY BE OBTAINED FROM THE MID-CHORD POINT DATA IN FIGURE B6.4.

FIGURE 10. SR7 BLADE MEASURED PRESSURE LOADING FOR  $M_{\infty} = 0.20$ ,  $J = 0.885$ ,  $CP = 0.250$ . (NOTE: THE RADIAL STATIONS HAVE BEEN ROTATED AND PLOTTED NORMAL TO THE PITCH CHANGE AXIS. SEE FIGURE 7 FOR UNMODIFIED PRESSURE TAP LOCATIONS.)

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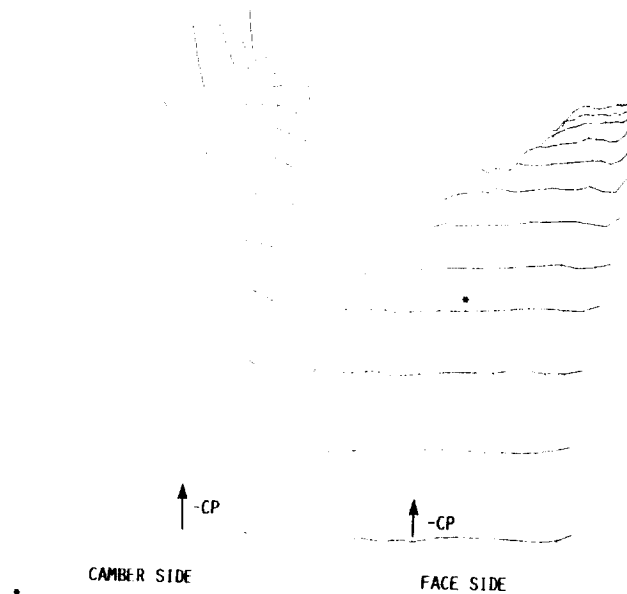


\* INDICATES THE MID-CHORD POINT OF RADIAL STATION 4 (WHERE THE CONSTANT VALUE OF DYNAMIC PRESSURE WAS COMPUTED FOR NORMALIZATION OF THE CURVES). SCALING MAY BE OBTAINED FROM THE MID-CHORD POINT DATA IN FIGURE B7.4.

(a)  $M_{\infty} = 0.50$ ,  $J = 3.071$ ,  $CP = 0.110$ .

FIGURE 11. - SR7 BLADE MEASURED PRESSURE LOADING. (NOTE: THE RADIAL STATIONS HAVE BEEN ROTATED AND PLOTTED NORMAL TO THE PITCH CHANGE AXIS. SEE FIGURE 7 FOR UNMODIFIED PRESSURE TAP LOCATIONS.)

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\* INDICATES THE MID-CHORD POINT OF RADIAL STATION 4 (WHERE THE CONSTANT VALUE OF DYNAMIC PRESSURE WAS COMPUTED FOR NORMALIZATION OF THE CURVES). SCALING MAY BE OBTAINED FROM THE MID-CHORD POINT DATA IN FIGURE B8.4.

(b)  $M_{\infty} = 0.50$ ,  $J = 3.067$ ,  $C_P = 0.361$ .

FIGURE 11. - CONTINUED.



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↑ -CP

↑ -CP

CAMBER SIDE

FACE SIDE

\* INDICATES THE MID-CHORD POINT OF RADIAL STATION 4 (WHERE THE CONSTANT VALUE OF DYNAMIC PRESSURE WAS COMPUTED FOR NORMALIZATION OF THE CURVES). SCALING MAY BE OBTAINED FROM THE MID-CHORD POINT DATA IN FIGURE B9.4.

(c)  $M_{\infty} = 0.50$ ,  $J = 3.083$ ,  $CP = 0.642$ .

FIGURE 11. - CONCLUDED.

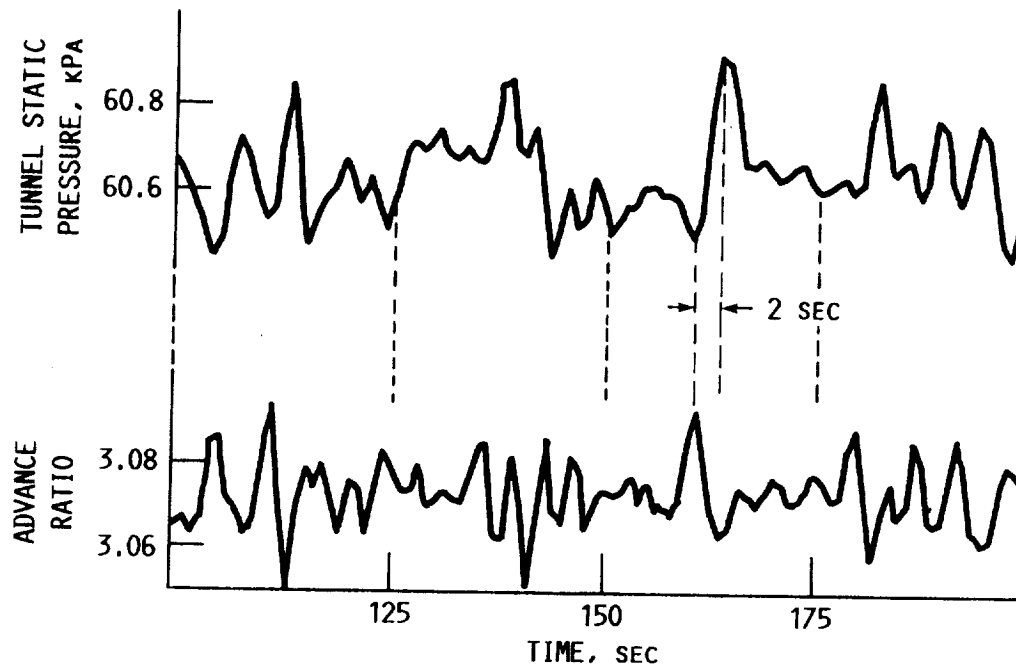


FIGURE 12. - TUNNEL STATIC PRESSURE FLUCTUATIONS AND CORRESPONDING ADVANCE RATIO VARIATIONS RESULTING FROM UNSTEADY FLOW AT  $M_0 = 0.78$ . THE SIGNALS HAVE BEEN FILTERED AT 5 Hz.

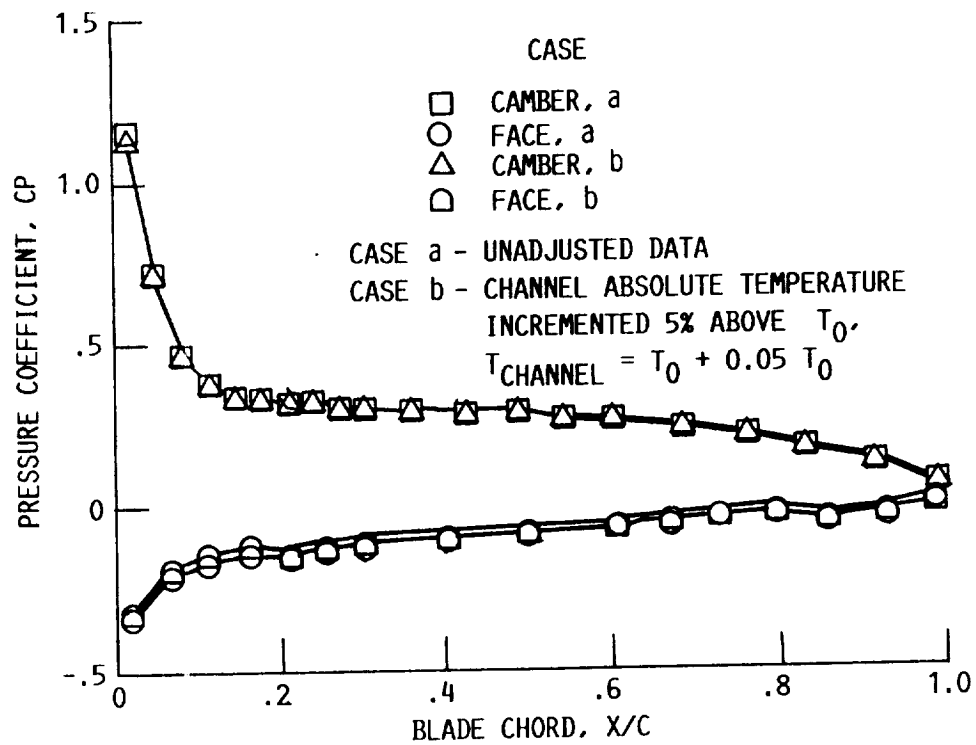


FIGURE 13. - DEMONSTRATION OF THE EFFECT OF AN ASSUMED 5% HIGHER AIR COLUMN TEMPERATURE THAN THE NORMALLY ASSUMED VALUE (EQUAL TO THE TUNNEL STATIC TEMPERATURE).

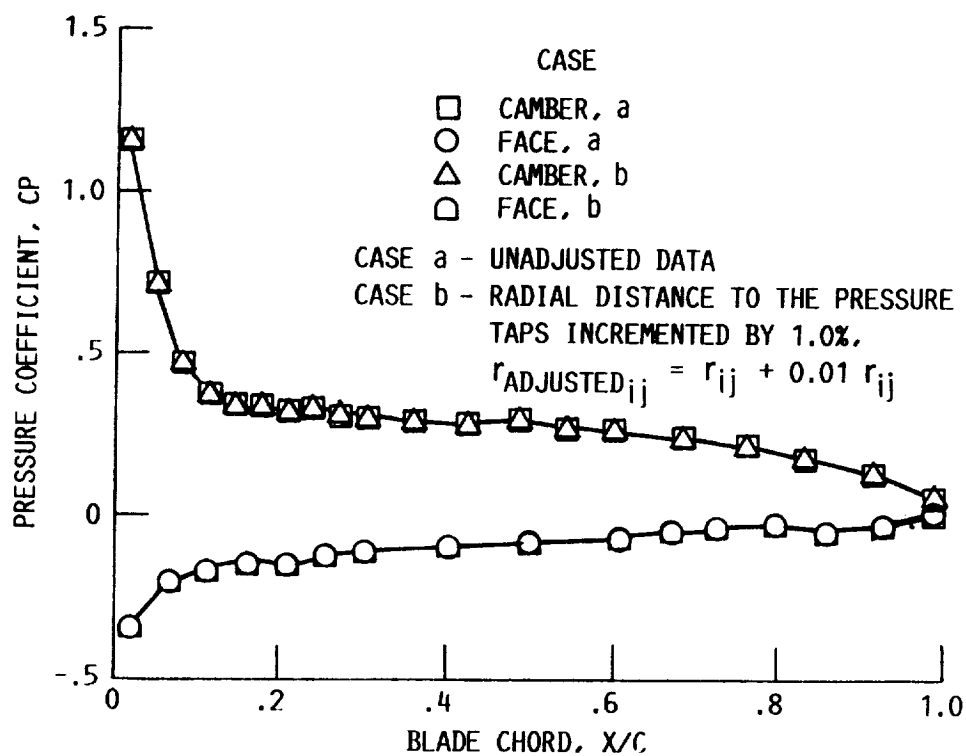


FIGURE 14. - DEMONSTRATION OF THE EFFECT OF A CONSTANT 1.0% POSITIVE ERROR IN THE RADIAL DISTANCES,  $r_{ij}$ .

## APPENDIX A

### Pressure Tap locations and Derivation of Equation 5

The coordinate system in which the pressure tap locations are defined is given at the left of figure A1 below. The x and z axes correspond to the blade pitch change and Propfan rotational axes, respectively, and the y-axis is parallel to the 104.1 cm (41.00 in) reference station, i.e.,  $\beta = 0.00^\circ$ .

To derive equation 5, which gives the radial distance from the Propfan axis of rotation to the pressure taps for any  $\beta$  based on the pressure tap locations defined when  $\beta = 0.00^\circ$ , consider the sketch at the right of figure A1. The radial distance to pressure tap 1j is then:

$$r_{1j}^* = x_{1j}^* + y_{1j}^* \quad (a1)$$

$$\text{where, } x_{1j}^* = x_{1j} \text{ and } y_{1j}^* = m \cos(\theta + \beta).$$

m and  $\theta$  are defined when  $\beta = 0.00^\circ$ , as follows:

$$m = \sqrt{y_{1j}^2 + z_{1j}^2} \text{ and } \theta = \arctan(z_{1j}/y_{1j}).$$

Then, upon substituting these relationships into a1 we get equation 5:

$$r_{1j}^* = \sqrt{x_{1j}^2 + [y_{1j}^2 + z_{1j}^2] \cos^2[\arctan(z_{1j}/y_{1j}) + \beta]}.$$

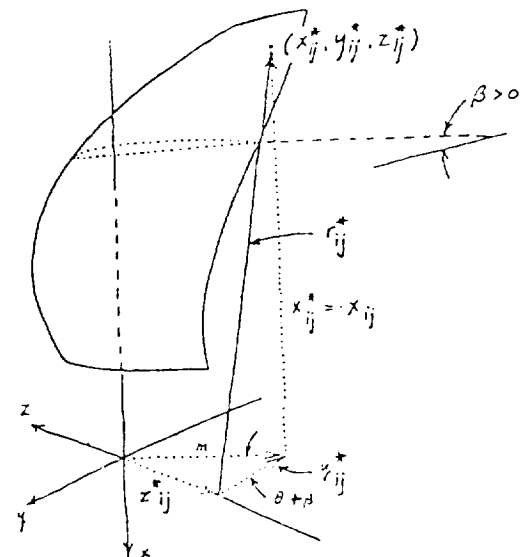
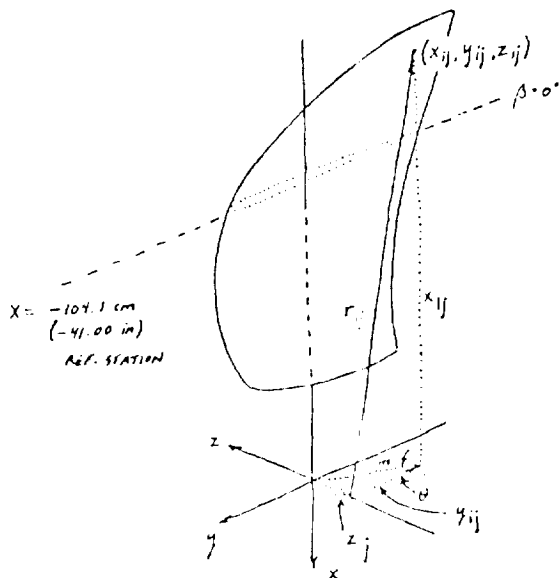
Figure A1

Coordinate System and Blade Configuration for:

the tap location data  
where  $\beta = 0.00^\circ$

and

the general case where  
 $\beta \neq 0.00^\circ$



## APPENDIX A - continued

The coordinate data for the pressure taps is given below.  
The measurement uncertainties are:

for  $x_{ij}$  and  $y_{ij}$ :  $\pm 0.013$  cm (0.005 in)  
and for  $z_{ij}$ :  $\pm 0.089$  cm (0.035 in).

The relatively large uncertainty in the  $z$  measurements is due to slight blade deflections which were associated with the blade setup. However, because  $z$  is a transverse coordinate, its uncertainty has a much smaller impact on the calculation of the radial distance to the pressure taps.

Note: a spot check of the pressure tap locations was made following the wind tunnel test to determine whether any shifting of the plastic skins may have occurred. No shifting was detected as the repeat measurements fell within the uncertainty ranges given above.

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
1	1	-36.71	-14.453	23.15	9.118	8.22	3.235
1	2	-37.11	-14.609	21.61	8.507	8.22	3.237
1	3	-37.44	-14.740	20.16	7.938	8.12	3.197
1	4	-37.81	-14.886	18.67	7.352	7.96	3.134
1	5	-38.16	-15.025	17.13	6.745	7.78	3.043
1	6	-38.53	-15.169	15.69	6.176	7.47	2.941
1	7	-38.88	-15.306	14.26	5.618	7.20	2.836
1	8	-39.20	-15.434	12.80	5.041	6.89	2.714
1	9	-39.52	-15.561	11.38	4.479	6.56	2.581
1	10	-39.88	-15.700	9.98	3.930	6.20	2.441
1	11	-40.52	-15.953	7.24	2.850	5.46	2.148
1	12	-41.19	-16.215	4.63	1.823	4.67	1.837
1	13	-41.57	-16.365	2.12	0.834	3.83	1.508
1	14	-42.48	-16.723	-0.72	-0.283	2.78	1.094
1	15	-43.12	-16.977	-3.23	-1.271	1.78	0.702
1	16	-43.90	-17.284	-6.68	-2.631	0.32	0.126
1	17	-44.79	-17.635	-9.88	-3.888	-1.12	-0.439
1	18	-45.56	-17.937	-13.11	-5.160	-2.64	-1.039
1	19	-46.39	-18.265	-16.27	-6.406	-4.15	-1.634
1	20	-47.14	-18.559	-19.29	-7.596	-5.56	-2.190
1	21	-36.55	-14.390	23.49	9.250	6.73	2.648
1	22	-37.24	-14.661	21.56	8.488	5.58	2.198
1	23	-37.77	-14.871	19.64	7.731	4.66	1.836
1	24	-38.26	-15.064	17.67	6.958	3.80	1.497
1	25	-38.78	-15.269	15.70	6.181	2.97	1.171
1	26	-39.28	-15.464	13.72	5.400	2.19	0.864
1	27	-39.73	-15.640	11.80	4.645	1.50	0.591
1	28	-40.87	-16.090	7.23	2.848	-0.08	-0.030
1	29	-41.99	-16.533	2.86	1.127	-1.37	-0.538
1	30	-43.09	-16.965	-1.57	-0.619	-2.47	-0.971
1	31	-43.71	-17.209	-4.36	-1.717	-3.10	-1.219
1	32	-44.43	-17.492	-7.49	-2.948	-3.75	-1.477
1	33	-45.16	-17.779	-10.46	-4.118	-4.34	-1.710
1	34	-45.81	-18.037	-13.34	-5.251	-4.91	-1.935
1	35	-46.53	-18.318	-16.40	-6.457	-5.55	-2.187
1	36	-47.19	-18.579	-19.23	-7.569	-6.15	-2.423

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)

I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
2	1	-56.55	-22.265	80.82	12.185	7.98	8.142
2	2	-56.80	-22.862	29.22	11.505	7.91	8.115
2	8	-57.04	-22.457	27.42	10.796	7.76	8.057
2	4	-57.38	-22.570	25.57	10.068	7.56	2.977
2	5	-57.54	-22.655	28.99	9.446	7.37	2.902
2	6	-57.55	-22.658	22.80	8.778	7.15	2.815
2	7	-58.01	-22.837	20.52	8.078	6.90	2.718
2	8	-58.25	-22.982	18.85	7.422	6.65	2.620
2	9	-58.46	-28.015	17.18	6.765	6.88	2.511
2	10	-58.70	-23.112	15.52	6.111	6.08	2.394
2	11	-59.14	-23.284	12.40	4.882	5.48	2.157
2	12	-59.60	-28.465	8.50	3.345	4.83	1.900
2	18	-60.08	-28.634	6.01	2.367	4.10	1.614
2	14	-60.48	-23.812	2.78	1.074	3.80	1.299
2	15	-60.93	-23.990	-0.89	-0.155	2.48	0.978
2	16	-61.48	-24.205	-4.86	-1.718	1.88	0.548
2	17	-62.04	-24.427	-8.35	-3.288	0.21	0.081
2	18	-62.62	-24.653	-12.18	-4.797	-0.97	-0.381
2	19	-63.24	-24.899	-16.26	-6.401	-2.25	-0.887
2	20	-63.77	-25.106	-19.95	-7.856	-3.48	-1.849
2	21	-56.54	-22.260	80.92	12.172	7.02	2.762
2	22	-56.85	-22.882	28.70	11.301	6.84	2.496
2	23	-57.22	-22.527	26.16	10.299	5.68	2.215
2	24	-57.59	-22.675	23.76	9.856	5.01	1.972
2	25	-57.98	-22.806	21.21	8.849	4.38	1.726
2	26	-58.30	-22.952	18.78	7.875	3.81	1.501
2	27	-58.66	-23.096	16.14	6.855	3.22	1.267
2	28	-59.39	-23.888	11.17	4.897	2.07	0.816
2	29	-60.18	-23.691	5.81	2.288	0.94	0.872
2	30	-60.97	-24.003	0.51	0.202	-0.09	-0.036
2	31	-61.48	-24.184	-2.79	-1.098	-0.69	-0.278
2	32	-61.90	-24.871	-6.14	-2.416	-1.29	-0.509
2	33	-62.88	-24.559	-9.65	-3.798	-1.92	-0.756
2	34	-62.88	-24.754	-13.01	-5.122	-2.53	-0.995
2	35	-63.88	-24.951	-16.65	-6.555	-3.20	-1.260
2	36	-63.85	-25.136	-19.88	-7.828	-3.77	-1.484



# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
8	1	-74.56	-29.356	31.85	12.538	6.17	2.481
8	2	-74.76	-29.435	30.02	11.818	6.20	2.441
8	8	-74.89	-29.483	28.28	11.132	6.13	2.418
8	4	-75.06	-29.550	26.54	10.448	6.03	2.875
8	5	-75.19	-29.602	24.75	9.746	5.91	2.828
8	6	-75.32	-29.653	22.84	8.992	5.78	2.276
8	7	-75.47	-29.713	21.23	8.860	5.66	2.229
8	8	-75.68	-29.776	19.16	7.544	5.51	2.171
8	9	-75.80	-29.841	17.26	6.795	5.87	2.116
8	10	-75.97	-29.909	15.38	6.054	5.22	2.054
8	11	-76.21	-30.003	12.28	4.814	4.90	1.928
8	12	-76.51	-30.128	8.54	3.861	4.48	1.764
8	13	-76.72	-30.205	5.43	2.137	4.11	1.617
8	14	-77.06	-30.837	1.98	0.779	3.67	1.443
8	15	-77.30	-30.432	-1.50	-0.592	3.17	1.248
8	16	-77.69	-30.587	-5.82	-2.292	2.51	0.990
8	17	-78.05	-30.728	-10.47	-4.124	1.74	0.686
8	18	-78.42	-30.874	-14.71	-5.793	0.96	0.378
8	19	-78.81	-31.029	-19.40	-7.636	0.01	0.003
8	20	-79.16	-31.167	-23.36	-9.195	-0.87	-0.841
8	21	-74.57	-29.857	31.89	12.555	5.55	2.186
8	22	-74.80	-29.450	29.22	11.504	5.02	1.976
8	23	-75.02	-29.536	26.62	10.479	4.67	1.839
8	24	-75.23	-29.618	24.11	9.492	4.31	1.695
8	25	-75.48	-29.715	21.24	8.862	3.89	1.533
8	26	-75.69	-29.798	18.61	7.828	3.56	1.400
8	27	-75.91	-29.885	16.01	6.805	3.25	1.280
8	28	-76.38	-30.072	10.31	4.058	2.51	0.988
8	29	-76.93	-30.287	4.24	1.668	1.73	0.683
8	30	-77.34	-30.448	-1.13	-0.443	1.09	0.428
8	31	-77.73	-30.601	-5.02	-1.976	0.63	0.248
8	32	-77.95	-30.688	-8.59	-3.882	0.21	0.083
8	33	-78.23	-30.798	-11.94	-4.702	-0.14	-0.057
8	34	-78.55	-30.925	-15.64	-6.156	-0.50	-0.195
8	35	-78.85	-31.043	-19.66	-7.740	-0.87	-0.843
8	36	-79.17	-31.168	-23.25	-9.153	-1.19	-0.467

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
4	1	-89.04	-35.055	27.94	11.000	5.08	1.980
4	2	-89.15	-35.099	26.24	10.830	5.15	2.028
4	8	-89.22	-35.127	24.87	9.596	5.20	2.046
4	4	-89.80	-35.156	22.54	8.874	5.20	2.047
4	5	-89.87	-35.184	20.96	8.258	5.19	2.044
4	6	-89.48	-35.209	19.15	7.588	5.17	2.086
4	7	-89.51	-35.242	17.22	6.779	5.14	2.024
4	8	-89.57	-35.262	15.61	6.146	5.11	2.011
4	9	-89.67	-35.302	18.72	5.401	5.05	1.989
4	10	-89.72	-35.324	11.89	4.680	4.99	1.963
4	11	-89.86	-35.879	8.65	3.406	4.84	1.905
4	12	-90.00	-35.435	5.17	2.037	4.67	1.889
4	18	-90.18	-35.486	1.95	0.767	4.50	1.770
4	14	-90.29	-35.548	-1.59	-0.626	4.26	1.679
4	15	-90.41	-35.596	-5.10	-2.009	4.01	1.577
4	16	-90.62	-35.679	-9.52	-3.750	3.65	1.438
4	17	-90.82	-35.755	-14.02	-5.521	3.23	1.270
4	18	-91.04	-35.844	-18.80	-7.203	2.75	1.084
4	19	-91.80	-35.943	-22.81	-8.979	2.20	0.866
4	20	-91.51	-36.027	-27.10	-10.671	1.61	0.685
4	21	-89.11	-35.082	27.93	10.995	4.54	1.787
4	22	-89.24	-35.135	25.47	10.028	4.31	1.695
4	23	-89.36	-35.181	22.58	8.891	4.09	1.611
4	24	-89.46	-35.222	20.19	7.950	3.92	1.545
4	25	-89.61	-35.281	17.87	6.837	3.74	1.473
4	26	-89.72	-35.321	14.82	5.836	3.59	1.415
4	27	-89.84	-35.371	12.00	4.728	3.42	1.345
4	28	-90.10	-35.473	6.09	2.399	3.04	1.197
4	29	-90.41	-35.593	0.62	0.245	2.70	1.064
4	30	-90.67	-35.696	-5.23	-2.059	2.35	0.925
4	31	-90.75	-35.727	-8.86	-3.490	2.18	0.837
4	32	-90.95	-35.809	-12.47	-4.911	1.95	0.766
4	33	-91.13	-35.877	-16.17	-6.365	1.78	0.701
4	34	-91.25	-35.924	-19.67	-7.744	1.64	0.645
4	35	-91.40	-35.983	-23.28	-9.165	1.49	0.588
4	36	-91.56	-36.047	-27.01	-10.632	1.30	0.510

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
5	1	-99.67	-89.242	21.98	8.655	4.48	1.762
5	2	-99.70	-89.251	20.88	8.005	4.66	1.834
5	3	-99.70	-89.252	18.61	7.325	4.77	1.877
5	4	-99.72	-89.258	16.84	6.681	4.85	1.909
5	5	-99.72	-89.260	15.24	6.000	4.90	1.930
5	6	-99.73	-89.265	13.59	5.352	4.96	1.951
5	7	-99.75	-89.271	11.76	4.628	5.00	1.970
5	8	-99.76	-89.276	10.19	4.012	5.03	1.981
5	9	-99.77	-89.280	8.49	3.342	5.04	1.985
5	10	-99.78	-89.283	6.81	2.683	5.04	1.985
5	11	-99.81	-89.297	8.80	1.497	5.04	1.985
5	12	-99.85	-89.812	0.33	0.129	5.01	1.974
5	13	-99.86	-89.818	-2.93	-1.155	4.97	1.955
5	14	-99.89	-89.826	-5.86	-2.307	4.89	1.925
5	15	-99.95	-89.852	-8.95	-3.525	4.79	1.884
5	16	-100.00	-89.870	-13.83	-5.249	4.59	1.809
5	17	-100.05	-89.890	-17.48	-6.863	4.38	1.724
5	18	-100.11	-89.413	-21.12	-8.313	4.16	1.636
5	19	-100.19	-89.445	-25.64	-10.095	3.86	1.519
5	20	-100.26	-89.473	-29.48	-11.606	3.54	1.395
5	21	-99.72	-89.260	21.96	8.644	4.01	1.580
5	22	-99.73	-89.264	19.41	7.641	3.96	1.559
5	23	-99.72	-89.259	17.03	6.705	3.91	1.538
5	24	-99.76	-89.277	14.80	5.628	3.88	1.526
5	25	-99.81	-89.297	11.77	4.682	3.85	1.515
5	26	-99.85	-89.810	9.89	3.696	3.79	1.493
5	27	-99.87	-89.818	6.89	2.714	3.74	1.474
5	28	-99.90	-89.830	1.48	0.581	3.64	1.433
5	29	-99.95	-89.849	-3.53	-1.390	3.55	1.396
5	30	-100.06	-89.895	-9.21	-3.627	3.43	1.351
5	31	-100.08	-89.402	-12.65	-4.982	3.36	1.323
5	32	-100.14	-89.427	-15.69	-6.178	3.32	1.308
5	33	-100.16	-89.435	-19.27	-7.585	3.29	1.296
5	34	-100.18	-89.439	-22.55	-8.878	3.29	1.295
5	35	-100.22	-89.455	-26.26	-10.340	3.29	1.294
5	36	-100.26	-89.473	-29.37	-11.564	3.27	1.287

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
6	1	-109.48	-48.101	18.55	5.883	4.89	1.728
6	2	-109.46	-48.095	12.09	4.761	4.57	1.801
6	8	-109.45	-48.089	10.72	4.222	4.69	1.848
6	4	-109.46	-48.096	9.24	3.638	4.80	1.888
6	5	-109.45	-48.091	7.77	3.060	4.89	1.924
6	6	-109.39	-48.065	6.85	2.501	4.98	1.961
6	7	-109.87	-48.059	4.86	1.912	5.07	1.995
6	8	-109.87	-48.060	8.44	1.854	5.18	2.020
6	9	-109.84	-48.048	1.89	0.745	5.20	2.046
6	10	-109.83	-48.042	0.00	0.001	5.27	2.078
6	11	-109.80	-48.032	-2.49	-0.982	5.84	2.104
6	12	-109.28	-48.022	-5.41	-2.128	5.42	2.182
6	13	-109.20	-42.994	-8.50	-3.346	5.47	2.153
6	14	-109.15	-42.978	-11.22	-4.417	5.49	2.160
6	15	-109.11	-42.956	-18.89	-5.467	5.49	2.161
6	16	-109.08	-42.944	-17.49	-6.884	5.47	2.155
6	17	-109.05	-42.938	-20.97	-8.257	5.48	2.186
6	18	-109.02	-42.928	-24.27	-9.554	5.39	2.122
6	19	-108.98	-42.904	-28.08	-11.084	5.29	2.081
6	20	-108.92	-42.882	-31.64	-12.458	5.14	2.024
6	21	-109.50	-48.111	18.41	5.279	8.96	1.560
6	22	-109.47	-48.100	11.22	4.419	8.99	1.571
6	23	-109.45	-48.091	9.12	3.589	4.04	1.589
6	24	-109.41	-48.075	6.91	2.719	4.09	1.609
6	25	-109.40	-48.072	4.65	1.881	4.14	1.628
6	26	-109.87	-48.060	2.67	1.053	4.17	1.640
6	27	-109.32	-48.039	0.42	0.166	4.20	1.654
6	28	-109.28	-48.025	-8.93	-1.548	4.26	1.679
6	29	-109.21	-42.995	-8.47	-3.335	4.33	1.705
6	30	-109.17	-42.981	-13.14	-5.174	4.89	1.728
6	31	-109.10	-42.954	-16.80	-6.419	4.48	1.746
6	32	-109.07	-42.942	-19.83	-7.612	4.50	1.771
6	33	-109.00	-42.915	-22.86	-8.805	4.57	1.800
6	34	-109.00	-42.918	-25.51	-10.042	4.69	1.845
6	35	-108.95	-42.893	-28.60	-11.258	4.81	1.892
6	36	-108.90	-42.873	-31.50	-12.403	4.87	1.919

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
7	1	-117.26	-46.166	5.03	1.982	4.54	1.786
7	2	-117.25	-46.161	3.70	1.458	4.72	1.859
7	3	-117.24	-46.156	2.53	0.995	4.85	1.909
7	4	-117.20	-46.140	1.23	0.485	4.97	1.955
7	5	-117.15	-46.121	-0.06	-0.025	5.07	1.996
7	6	-117.08	-46.096	-1.26	-0.498	5.17	2.034
7	7	-117.07	-46.091	-2.71	-1.066	5.27	2.075
7	8	-117.06	-46.087	-3.93	-1.547	5.35	2.108
7	9	-117.01	-46.067	-5.12	-2.016	5.43	2.138
7	10	-116.97	-46.053	-6.38	-2.510	5.51	2.168
7	11	-116.89	-46.019	-8.72	-3.438	5.63	2.218
7	12	-116.80	-45.986	-11.34	-4.465	5.76	2.267
7	13	-116.76	-45.969	-13.65	-5.373	5.85	2.304
7	14	-116.70	-45.944	-16.09	-6.384	5.93	2.336
7	15	-116.61	-45.910	-18.41	-7.249	6.00	2.361
7	16	-116.56	-45.891	-21.62	-8.518	6.07	2.388
7	17	-116.47	-45.855	-24.25	-9.547	6.10	2.400
7	18	-116.38	-45.817	-27.82	-10.754	6.12	2.408
7	19	-116.31	-45.790	-30.36	-11.954	6.09	2.399
7	20	-116.23	-45.760	-33.05	-13.010	6.05	2.382
7	21	-117.24	-46.158	4.75	1.869	4.21	1.659
7	22	-117.23	-46.153	2.90	1.142	4.26	1.679
7	23	-117.14	-46.117	1.07	0.423	4.34	1.708
7	24	-117.14	-46.117	-0.75	-0.295	4.41	1.737
7	25	-117.03	-46.073	-2.58	-1.016	4.50	1.772
7	26	-117.00	-46.064	-4.36	-1.718	4.58	1.803
7	27	-116.95	-46.045	-6.22	-2.448	4.65	1.832
7	28	-116.85	-46.004	-10.04	-3.953	4.80	1.889
7	29	-116.76	-45.969	-13.82	-5.442	4.94	1.944
7	30	-116.62	-45.913	-17.86	-7.031	5.09	2.004
7	31	-116.54	-45.880	-20.25	-7.972	5.19	2.048
7	32	-116.48	-45.857	-22.90	-9.015	5.31	2.091
7	33	-116.42	-45.834	-25.50	-10.039	5.44	2.141
7	34	-116.36	-45.810	-28.01	-11.027	5.58	2.197
7	35	-116.27	-45.777	-30.69	-12.083	5.73	2.254
7	36	-116.23	-45.758	-32.98	-12.984	5.82	2.290

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
8	1	-123.29	-48.541	-8.16	-1.248	4.81	1.898
8	2	-123.25	-48.528	-4.27	-1.680	4.96	1.951
8	3	-123.20	-48.502	-5.87	-2.114	5.09	2.002
8	4	-123.15	-48.485	-6.40	-2.520	5.19	2.044
8	5	-123.14	-48.480	-7.54	-2.967	5.30	2.086
8	6	-123.07	-48.451	-8.66	-3.411	5.40	2.127
8	7	-123.00	-48.426	-9.70	-3.819	5.49	2.160
8	8	-122.98	-48.416	-10.93	-4.304	5.58	2.198
8	9	-122.93	-48.899	-12.18	-4.797	5.68	2.235
8	10	-122.88	-48.879	-13.22	-5.206	5.75	2.264
8	11	-122.80	-48.846	-15.29	-6.019	5.89	2.318
8	12	-122.69	-48.805	-17.42	-6.859	6.01	2.366
8	13	-122.58	-48.258	-19.67	-7.748	6.18	2.413
8	14	-122.52	-48.236	-21.66	-8.528	6.22	2.449
8	15	-122.42	-48.197	-23.77	-9.360	6.30	2.481
8	16	-122.32	-48.156	-25.84	-10.174	6.37	2.509
8	17	-122.26	-48.135	-27.88	-10.977	6.44	2.534
8	18	-122.18	-48.083	-29.82	-11.741	6.46	2.545
8	19	-122.10	-48.069	-31.93	-12.572	6.48	2.553
8	20	-121.97	-48.018	-33.92	-13.353	6.49	2.555
8	21	-123.25	-48.525	-8.85	-1.319	4.54	1.786
8	22	-123.19	-48.501	-4.85	-1.909	4.61	1.813
8	23	-123.16	-48.488	-6.29	-2.478	4.69	1.845
8	24	-123.07	-48.452	-7.85	-3.089	4.78	1.881
8	25	-122.97	-48.414	-9.43	-3.712	4.87	1.918
8	26	-122.93	-48.397	-10.83	-4.265	4.95	1.947
8	27	-122.86	-48.370	-12.48	-4.912	5.04	1.983
8	28	-122.78	-48.320	-15.68	-6.172	5.21	2.051
8	29	-122.60	-48.267	-18.74	-7.377	5.37	2.116
8	30	-122.47	-48.215	-22.06	-8.684	5.56	2.189
8	31	-122.35	-48.170	-24.26	-9.552	5.69	2.241
8	32	-122.26	-48.134	-26.21	-10.319	5.80	2.285
8	33	-122.17	-48.100	-28.04	-11.040	5.92	2.331
8	34	-122.08	-48.063	-30.09	-11.847	6.06	2.386
8	35	-122.04	-48.047	-32.11	-12.641	6.18	2.435
8	36	-121.95	-48.013	-33.95	-13.365	6.29	2.477

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
9	1	-127.98	-50.385	-10.35	-4.075	5.02	1.976
9	2	-127.94	-50.369	-11.45	-4.508	5.17	2.034
9	3	-127.86	-50.387	-12.83	-5.052	5.34	2.101
9	4	-127.77	-50.305	-13.96	-5.498	5.46	2.148
9	5	-127.73	-50.288	-15.07	-5.934	5.55	2.187
9	6	-127.62	-50.246	-16.17	-6.365	5.64	2.222
9	7	-127.57	-50.223	-17.32	-6.819	5.74	2.259
9	8	-127.49	-50.194	-18.36	-7.228	5.82	2.292
9	9	-127.44	-50.174	-19.36	-7.623	5.90	2.323
9	10	-127.36	-50.142	-20.43	-8.043	5.98	2.354
9	11	-127.25	-50.099	-22.17	-8.727	6.10	2.401
9	12	-127.17	-50.065	-23.57	-9.280	6.19	2.436
9	13	-127.11	-50.045	-24.84	-9.781	6.26	2.465
9	14	-126.97	-49.990	-26.37	-10.382	6.34	2.498
9	15	-126.90	-49.960	-27.67	-10.894	6.41	2.523
9	16	-126.78	-49.915	-29.05	-11.438	6.47	2.547
9	17	-126.71	-49.885	-30.54	-12.023	6.51	2.563
9	18	-126.58	-49.836	-32.20	-12.676	6.55	2.578
9	19	-126.49	-49.799	-33.45	-13.169	6.58	2.590
9	20	-126.39	-49.761	-34.53	-13.596	6.60	2.599
9	21	-127.96	-50.377	-10.57	-4.163	4.81	1.892
9	22	-127.91	-50.357	-11.71	-4.611	4.87	1.916
9	23	-127.80	-50.315	-13.21	-5.199	4.96	1.953
9	24	-127.73	-50.286	-14.43	-5.682	5.04	1.983
9	25	-127.65	-50.256	-15.62	-6.150	5.11	2.012
9	26	-127.57	-50.225	-16.90	-6.652	5.20	2.046
9	27	-127.48	-50.189	-18.45	-7.262	5.30	2.088
9	28	-127.29	-50.115	-21.05	-8.288	5.48	2.157
9	29	-127.18	-50.071	-23.36	-9.198	5.63	2.218
9	30	-127.00	-49.999	-25.70	-10.119	5.81	2.289
9	31	-126.91	-49.964	-27.18	-10.700	5.90	2.323
9	32	-126.79	-49.916	-28.71	-11.302	6.01	2.368
9	33	-126.72	-49.889	-30.14	-11.868	6.12	2.408
9	34	-126.60	-49.841	-31.66	-12.465	6.22	2.450
9	35	-126.49	-49.799	-33.13	-13.044	6.28	2.471
9	36	-126.38	-49.757	-34.50	-13.582	6.41	2.523

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
10	1	-181.88	-51.728	-15.94	-6.277	5.14	2.025
10	2	-181.80	-51.698	-17.20	-6.770	5.81	2.092
10	8	-181.19	-51.648	-18.41	-7.247	5.46	2.150
10	4	-181.09	-51.609	-19.51	-7.681	5.58	2.196
10	5	-181.00	-51.575	-20.61	-8.114	5.67	2.234
10	6	-180.95	-51.554	-21.68	-8.536	5.77	2.270
10	7	-180.84	-51.510	-22.56	-8.888	5.84	2.801
10	8	-180.77	-51.488	-23.56	-9.276	5.93	2.834
10	9	-180.72	-51.464	-24.45	-9.627	6.00	2.861
10	10	-180.68	-51.429	-25.25	-9.942	6.06	2.886
10	11	-180.57	-51.404	-26.04	-10.252	6.12	2.409
10	12	-180.52	-51.387	-26.84	-10.565	6.17	2.431
10	18	-180.41	-51.842	-27.72	-10.915	6.23	2.454
10	14	-180.34	-51.814	-28.72	-11.307	6.29	2.477
10	15	-180.27	-51.286	-29.64	-11.670	6.34	2.495
10	16	-180.15	-51.242	-30.82	-12.184	6.39	2.515
10	17	-180.08	-51.212	-31.84	-12.535	6.42	2.528
10	18	-129.97	-51.171	-33.01	-12.997	6.46	2.545
10	19	-129.91	-51.147	-34.01	-13.391	6.49	2.554
10	20	-129.82	-51.109	-34.95	-13.761	6.50	2.561
10	21	-181.29	-51.690	-16.22	-6.887	4.98	1.959
10	22	-181.21	-51.658	-17.87	-6.837	5.05	1.987
10	28	-181.18	-51.626	-18.53	-7.294	5.13	2.019
10	24	-181.02	-51.584	-19.78	-7.789	5.21	2.052
10	25	-180.92	-51.545	-20.79	-8.187	5.29	2.084
10	26	-180.81	-51.500	-22.08	-8.691	5.39	2.123
10	27	-180.72	-51.465	-23.16	-9.118	5.47	2.153
10	28	-180.58	-51.411	-25.02	-9.852	5.62	2.213
10	29	-180.45	-51.357	-26.69	-10.507	5.75	2.263
10	30	-180.30	-51.801	-28.15	-11.081	5.87	2.810
10	31	-180.21	-51.268	-29.36	-11.561	5.96	2.845
10	32	-180.14	-51.238	-30.50	-12.008	6.05	2.880
10	33	-180.03	-51.191	-31.61	-12.444	6.13	2.414
10	34	-129.95	-51.160	-32.74	-12.889	6.21	2.444
10	35	-129.86	-51.127	-33.90	-13.847	6.28	2.473
10	36	-129.76	-51.088	-34.87	-13.728	6.34	2.496



# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
11	1	-182.65	-52.228	-18.24	-7.183	5.21	2.052
11	2	-182.60	-52.208	-19.44	-7.653	5.36	2.112
11	3	-182.58	-52.178	-20.47	-8.059	5.49	2.160
11	4	-182.46	-52.150	-21.87	-8.413	5.58	2.198
11	5	-182.41	-52.130	-22.09	-8.698	5.65	2.225
11	6	-182.32	-52.093	-22.85	-8.997	5.73	2.254
11	7	-182.25	-52.067	-23.65	-9.312	5.79	2.280
11	8	-182.18	-52.038	-24.50	-9.647	5.86	2.309
11	9	-182.11	-52.012	-25.32	-9.970	5.94	2.338
11	10	-182.05	-51.990	-26.12	-10.285	6.00	2.364
11	11	-182.00	-51.968	-26.97	-10.618	6.07	2.389
11	12	-181.98	-51.939	-27.85	-10.964	6.13	2.414
11	13	-181.84	-51.906	-28.77	-11.327	6.20	2.440
11	14	-181.78	-51.882	-29.53	-11.627	6.24	2.455
11	15	-181.68	-51.842	-30.33	-11.942	6.27	2.470
11	16	-181.61	-51.813	-31.87	-12.851	6.32	2.488
11	17	-181.51	-51.777	-32.26	-12.701	6.36	2.503
11	18	-181.41	-51.738	-33.24	-13.085	6.40	2.518
11	19	-181.39	-51.728	-34.20	-13.463	6.42	2.526
11	20	-181.29	-51.689	-35.05	-13.801	6.44	2.534
11	21	-182.62	-52.211	-18.46	-7.268	5.05	1.987
11	22	-182.54	-52.183	-19.54	-7.691	5.12	2.015
11	23	-182.42	-52.134	-20.79	-8.184	5.20	2.049
11	24	-182.37	-52.115	-21.72	-8.552	5.28	2.078
11	25	-182.25	-52.067	-23.03	-9.065	5.39	2.122
11	26	-182.16	-52.031	-24.09	-9.483	5.48	2.156
11	27	-182.07	-51.995	-25.19	-9.917	5.56	2.188
11	28	-181.91	-51.933	-26.70	-10.511	5.68	2.237
11	29	-181.82	-51.897	-28.00	-11.025	5.79	2.280
11	30	-181.72	-51.859	-29.20	-11.498	5.88	2.316
11	31	-181.61	-51.815	-30.26	-11.915	5.97	2.352
11	32	-181.54	-51.786	-31.29	-12.320	6.06	2.384
11	33	-181.46	-51.756	-32.21	-12.683	6.12	2.410
11	34	-181.37	-51.720	-33.18	-13.063	6.19	2.436
11	35	-181.28	-51.684	-34.16	-13.450	6.26	2.463
11	36	-181.20	-51.654	-35.05	-13.801	6.31	2.484

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)

I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
12	2	-183.96	-52.742	-20.60	-8.111	5.27	2.075
12	8	-183.98	-52.728	-21.38	-8.416	5.38	2.117
12	4	-183.87	-52.706	-22.15	-8.722	5.47	2.154
12	5	-183.80	-52.677	-22.89	-9.012	5.56	2.190
12	6	-183.72	-52.645	-23.80	-9.370	5.66	2.228
12	7	-183.63	-52.609	-24.55	-9.667	5.74	2.260
12	8	-183.58	-52.591	-25.42	-10.009	5.82	2.290
12	9	-183.48	-52.551	-26.24	-10.830	5.89	2.320
12	10	-183.38	-52.518	-27.03	-10.641	5.96	2.347
12	11	-183.34	-52.495	-27.84	-10.960	6.02	2.372
12	12	-183.28	-52.474	-28.66	-11.285	6.08	2.395
12	18	-183.24	-52.456	-29.46	-11.600	6.14	2.416
12	14	-183.14	-52.417	-30.28	-11.901	6.18	2.434
12	15	-183.06	-52.386	-31.05	-12.225	6.28	2.452
12	16	-182.97	-52.350	-31.90	-12.559	6.27	2.469
12	17	-182.89	-52.319	-32.78	-12.886	6.30	2.482
12	18	-182.81	-52.286	-33.57	-13.217	6.34	2.495
12	19	-182.75	-52.264	-34.39	-13.539	6.36	2.504
12	20	-182.67	-52.234	-35.16	-13.842	6.38	2.512
12	21	-183.94	-52.783	-20.68	-8.148	5.12	2.014
12	22	-183.87	-52.705	-21.78	-8.573	5.19	2.043
12	23	-183.75	-52.659	-22.91	-9.021	5.29	2.081
12	24	-183.66	-52.623	-24.01	-9.458	5.38	2.119
12	25	-183.56	-52.583	-25.08	-9.878	5.47	2.154
12	26	-183.46	-52.543	-26.14	-10.291	5.56	2.189
12	27	-183.36	-52.502	-27.24	-10.724	5.66	2.227
12	28	-183.24	-52.455	-28.36	-11.164	5.75	2.264
12	29	-183.18	-52.432	-29.29	-11.531	5.82	2.292
12	30	-183.08	-52.392	-30.26	-11.913	5.90	2.323
12	31	-183.02	-52.370	-31.13	-12.255	5.97	2.351
12	32	-182.98	-52.383	-31.99	-12.598	6.05	2.380
12	33	-182.84	-52.299	-32.67	-12.863	6.10	2.400
12	34	-182.77	-52.271	-33.64	-13.245	6.17	2.428
12	35	-182.66	-52.230	-34.46	-13.568	6.23	2.451
12	36	-182.61	-52.208	-35.21	-13.862	6.27	2.469

# APPENDIX A - CONTINUED

## LAP/SR7 STEADY PRESSURE BLADE

PRESSURE TAP COORDINATES, X(I,J), Y(I,J), Z(I,J)  
I = RADIAL STATION NO., J = CHANNEL NO.

I	J	X, CM	X, IN	Y, CM	Y, IN	Z, CM	Z, IN
18	8	-185.28	-53.242	-22.73	-8.950	5.81	2.091
18	4	-185.16	-53.214	-23.63	-9.302	5.44	2.142
18	5	-185.08	-53.162	-24.38	-9.598	5.55	2.185
18	6	-184.98	-53.141	-25.06	-9.865	5.63	2.217
18	7	-184.92	-53.120	-25.70	-10.117	5.70	2.245
18	8	-184.82	-53.079	-26.40	-10.394	5.78	2.275
18	9	-184.75	-53.053	-27.18	-10.700	5.85	2.304
18	10	-184.69	-53.026	-27.89	-10.981	5.91	2.326
18	11	-184.58	-52.985	-28.63	-11.271	5.96	2.348
18	12	-184.50	-52.951	-29.49	-11.612	6.04	2.377
18	13	-184.48	-52.927	-30.15	-11.872	6.07	2.390
18	14	-184.84	-52.888	-30.91	-12.168	6.13	2.414
18	15	-184.25	-52.856	-31.58	-12.435	6.17	2.430
18	16	-184.17	-52.822	-32.37	-12.745	6.21	2.446
18	17	-184.11	-52.801	-33.07	-13.019	6.24	2.458
18	18	-184.02	-52.765	-33.84	-13.322	6.27	2.470
18	19	-183.95	-52.735	-34.53	-13.593	6.30	2.481
18	20	-183.87	-52.703	-35.31	-13.901	6.33	2.492
18	21	-185.19	-53.223	-22.72	-8.945	5.18	2.040
18	22	-185.07	-53.179	-23.81	-9.374	5.27	2.074
18	23	-184.99	-53.146	-24.96	-9.826	5.36	2.111
18	24	-184.85	-53.089	-26.00	-10.237	5.47	2.153
18	25	-184.75	-53.051	-27.03	-10.640	5.56	2.190
18	26	-184.63	-53.005	-28.12	-11.070	5.66	2.227
18	27	-184.50	-52.954	-29.11	-11.460	5.74	2.261
18	28	-184.43	-52.925	-29.82	-11.742	5.80	2.283
18	29	-184.36	-52.898	-30.54	-12.024	5.85	2.305
18	30	-184.29	-52.871	-31.26	-12.308	5.92	2.330
18	31	-184.22	-52.842	-31.94	-12.575	5.97	2.352
18	32	-184.14	-52.811	-32.60	-12.833	6.03	2.374
18	33	-184.04	-52.773	-33.28	-13.103	6.09	2.397
18	34	-183.98	-52.730	-34.02	-13.393	6.15	2.420
18	35	-183.91	-52.719	-34.72	-13.671	6.20	2.441
18	36	-183.81	-52.680	-35.33	-13.910	6.23	2.454

## APPENDIX B

### SR7 Blade - Steady Surface Pressure Data

The data is given in figures B1 through B13 and is organized as shown in the table below. Pressure coefficients are based on equations 6 and 7.

#### Operating Conditions Versus Figure Number

Figure Number	Nominal Mach Number, $M_\infty$	Advance Ratio, $J$	Power coeff., $CP$	Blade Angle, $\beta$
B1	0.030 $\pm$ 0.015	0.123 $\pm$ 0.062	0.080 $\pm$ 0.002	14.1 $\pm$ 0.6°
B2	0.030 $\pm$ 0.015	0.123 $\pm$ 0.062	0.095 $\pm$ 0.003	15.2 $\pm$ 0.8°
B3	0.030 $\pm$ 0.015	0.184 $\pm$ 0.062	0.154 $\pm$ 0.004	19.4 $\pm$ 0.8°
B4	0.030 $\pm$ 0.015	0.185 $\pm$ 0.061	0.205 $\pm$ 0.003	22.2 $\pm$ 0.6°
B5	0.200 $\pm$ 0.001	0.880 $\pm$ 0.005	0.100 $\pm$ 0.002	26.6 $\pm$ 1.0°
B6	0.200 $\pm$ 0.001	0.883 $\pm$ 0.009	0.250 $\pm$ 0.001	31.3 $\pm$ 0.9°
B7	0.500 $\pm$ 0.001	3.071 $\pm$ 0.013	0.110 $\pm$ 0.004	51.8 $\pm$ 0.9°
B8	0.500 $\pm$ 0.001	3.067 $\pm$ 0.009	0.361 $\pm$ 0.005	55.1 $\pm$ 0.8°
B9	0.500 $\pm$ 0.001	3.083 $\pm$ 0.008	0.642 $\pm$ 0.009	58.5 $\pm$ 1.0°
B10 *	0.600 $\pm$ 0.002	3.078 $\pm$ 0.007	0.230 $\pm$ 0.006	54.5 $\pm$ 1.3°
B11 *	0.700 $\pm$ 0.002	3.064 $\pm$ 0.012	0.228 $\pm$ 0.006	54.5 $\pm$ 1.3°
B12 *	0.780 $\pm$ 0.002	3.209 $\pm$ 0.014	0.111 $\pm$ 0.005†	54.5 $\pm$ 1.3°
B13 *	0.775 $\pm$ 0.005	3.088 $\pm$ 0.012	0.227 $\pm$ 0.003	54.6 $\pm$ 1.3°

± Indicates max. station by station variation of the parameter.

\* Radial stations 2,4 and 10 were not run at this condition.

† Variation range does not include the radial station 13 case where  $CP = .157$ .

FIGURE B1

(B1.1 through B1.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.030 \pm 0.015$

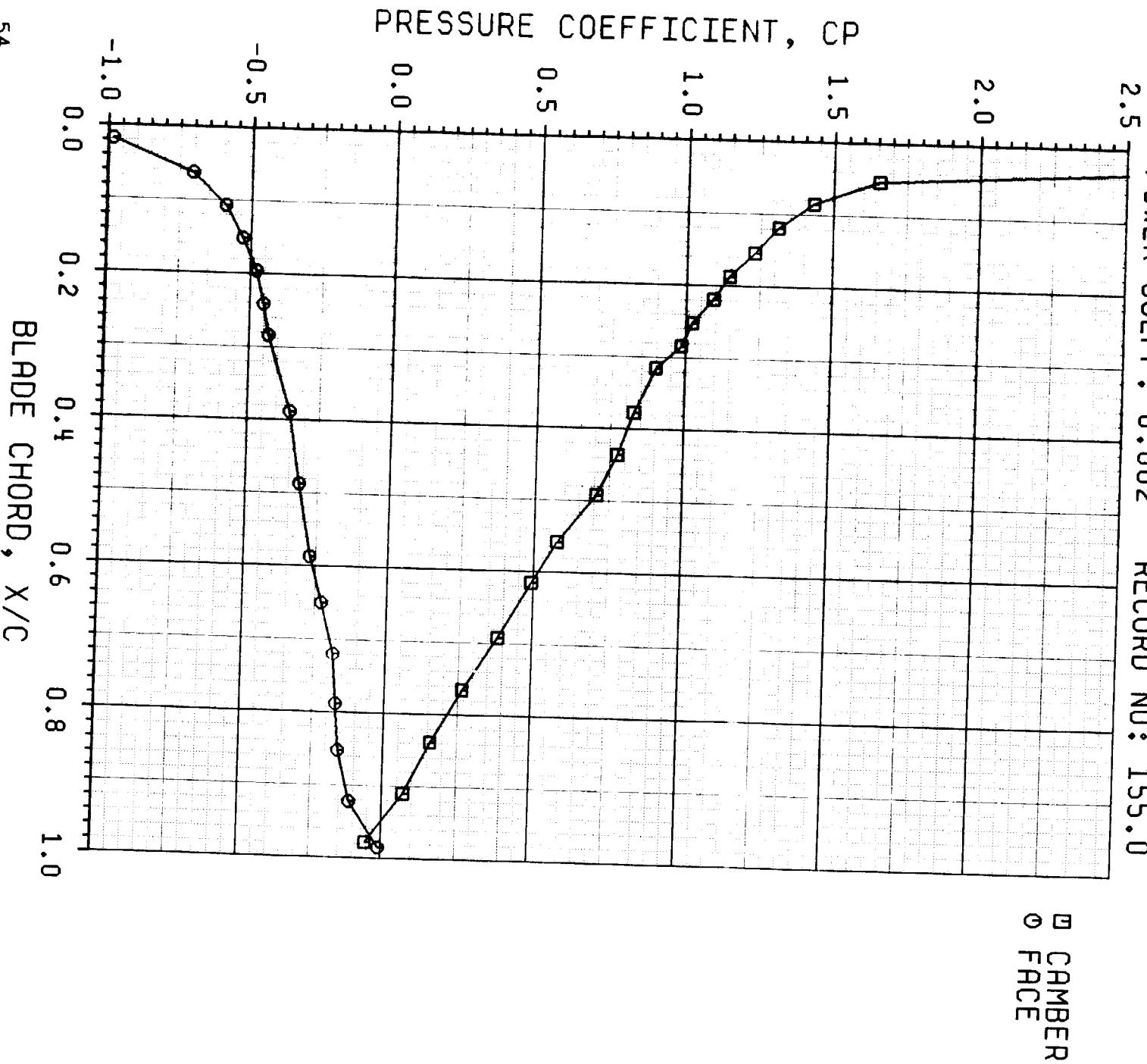
Advance Ratio,  $J = 0.123 \pm 0.062$

Power Coefficient,  $CP = 0.080 \pm 0.002$

Blade Angle,  $\beta = 14.1 \pm 0.6^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1    MACH NO: 0.02    ADV. RATIO: 0.123  
POWER COEFF: 0.082    RECORD NO: 155.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 155.0

## WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	89150.0 PA	12.930 PSI
AIR DENSITY:	1.08205 KG/M3	0.067552 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.79 M/S	22.29 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.123	
POWER COEFFICIENT:	0.082	
BLADE ANGLE (@ X=41" STA):	13.5 DEG.	
BLADE CHORD:	0.475 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.334	
REL MACH NO. (@ MID CHORD):	0.172	

RUN DATE:	03-12-1987
RUN TIME:	16:12:59

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 155.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, P0: 89150.0 PA, 12.930 PSI

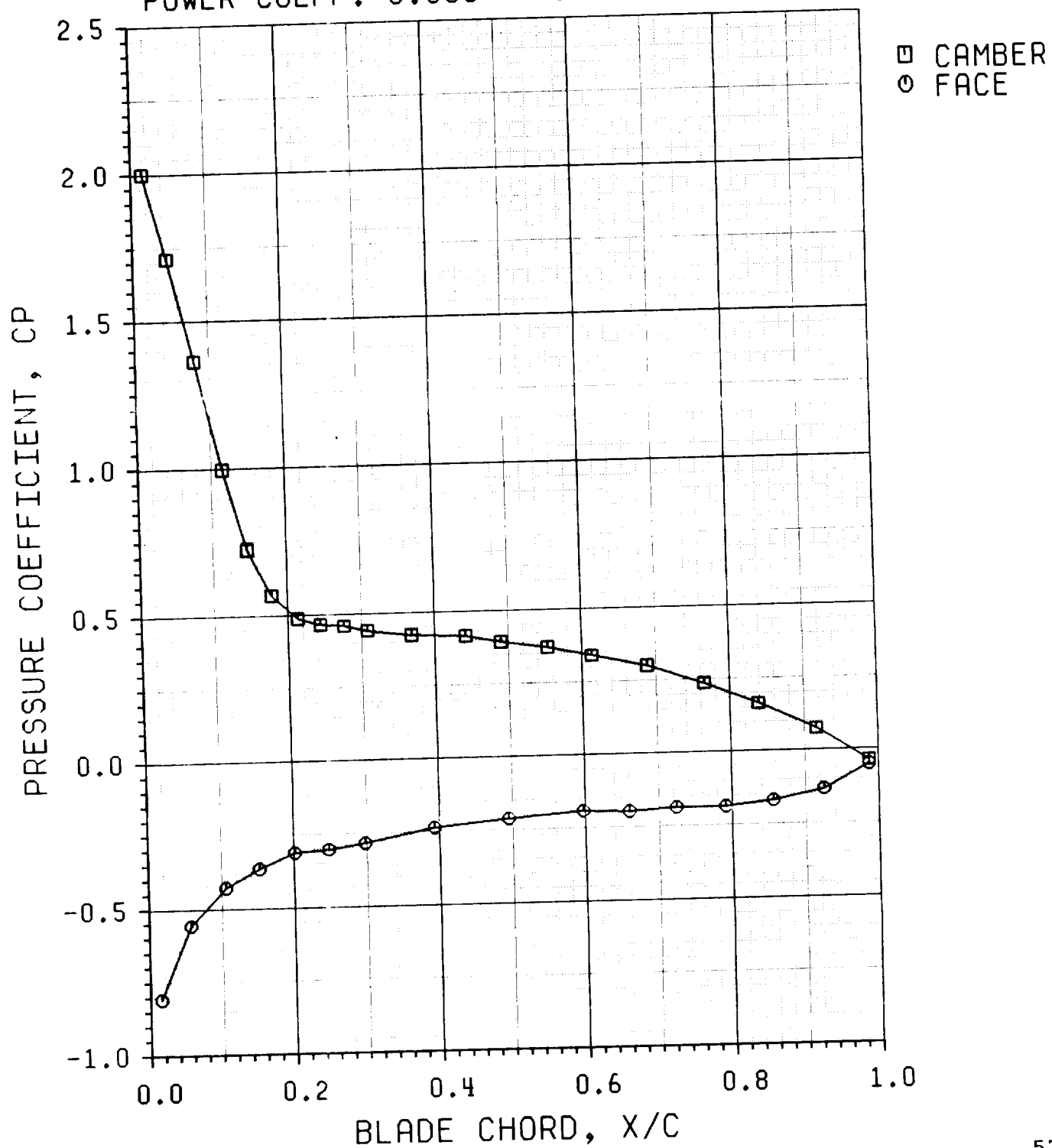
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	84063.1	12.192	1538.5	0.228	-3.306
0.058	86646.9	12.567	1512.7	0.219	-1.655
0.085	87017.8	12.620	1490.5	0.216	-1.431
0.119	87218.3	12.650	1478.4	0.214	-1.311
0.154	87357.2	12.670	1457.8	0.211	-1.230
0.187	87488.9	12.689	1449.2	0.210	-1.146
0.219	87574.0	12.701	1448.0	0.209	-1.092
0.252	87681.4	12.717	1438.4	0.209	-1.021
0.284	87736.4	12.725	1437.3	0.208	-0.984
0.315	87853.1	12.742	1441.9	0.209	-0.899
0.377	87944.2	12.755	1456.1	0.211	-0.828
0.436	87999.9	12.763	1484.1	0.215	-0.775
0.492	88087.9	12.776	1502.3	0.218	-0.707
0.558	88244.0	12.798	1568.0	0.227	-0.578
0.615	88348.9	12.813	1624.4	0.236	-0.493
0.692	88495.6	12.835	1708.5	0.248	-0.383
0.765	88670.4	12.860	1813.7	0.263	-0.264
0.838	88843.6	12.885	1924.0	0.279	-0.159
0.910	89006.8	12.909	2052.3	0.298	-0.070
0.978	89272.6	12.947	2184.0	0.317	0.056
FACE					
0.018	90677.2	13.151	1553.1	0.225	0.983
0.063	90236.1	13.087	1540.0	0.223	0.705
0.107	90048.4	13.060	1520.9	0.221	0.591
0.151	89946.0	13.045	1502.7	0.218	0.530
0.196	89864.5	13.033	1491.4	0.216	0.479
0.241	89821.6	13.027	1483.6	0.215	0.453
0.284	89788.8	13.022	1478.9	0.214	0.432
0.388	89678.2	13.006	1494.4	0.217	0.353
0.487	89632.8	13.000	1539.8	0.223	0.314
0.587	89586.1	12.993	1612.1	0.234	0.271
0.650	89529.8	12.985	1667.9	0.242	0.228
0.720	89468.2	12.976	1746.5	0.253	0.182
0.788	89462.5	12.975	1838.9	0.267	0.170
0.852	89455.9	12.974	1937.6	0.281	0.158
0.922	89386.3	12.964	2057.9	0.298	0.115
0.985	89171.7	12.933	2182.0	0.316	0.010

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.03    ADV. RATIO: 0.182

POWER COEFF: 0.080    RECORD NO: 206.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 206.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	88760.0 PA	12.873 PSI
AIR DENSITY:	1.10032 KG/M3	0.068693 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.08 M/S	33.08 FT/S

## PROPFAN:

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RADIAL STATION:	2	
ROTOR SPEED (RPM):	1201.0	
ADVANCE RATIO:	0.182	
POWER COEFFICIENT:	0.080	
BLADE ANGLE (@ X=41" STA):	13.6 DEG.	
BLADE CHORD:	0.540 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.469	
REL MACH NO. (@ MID CHORD):	0.245	

RUN DATE:	03-13-1987
RUN TIME:	22:12:05

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 206.0

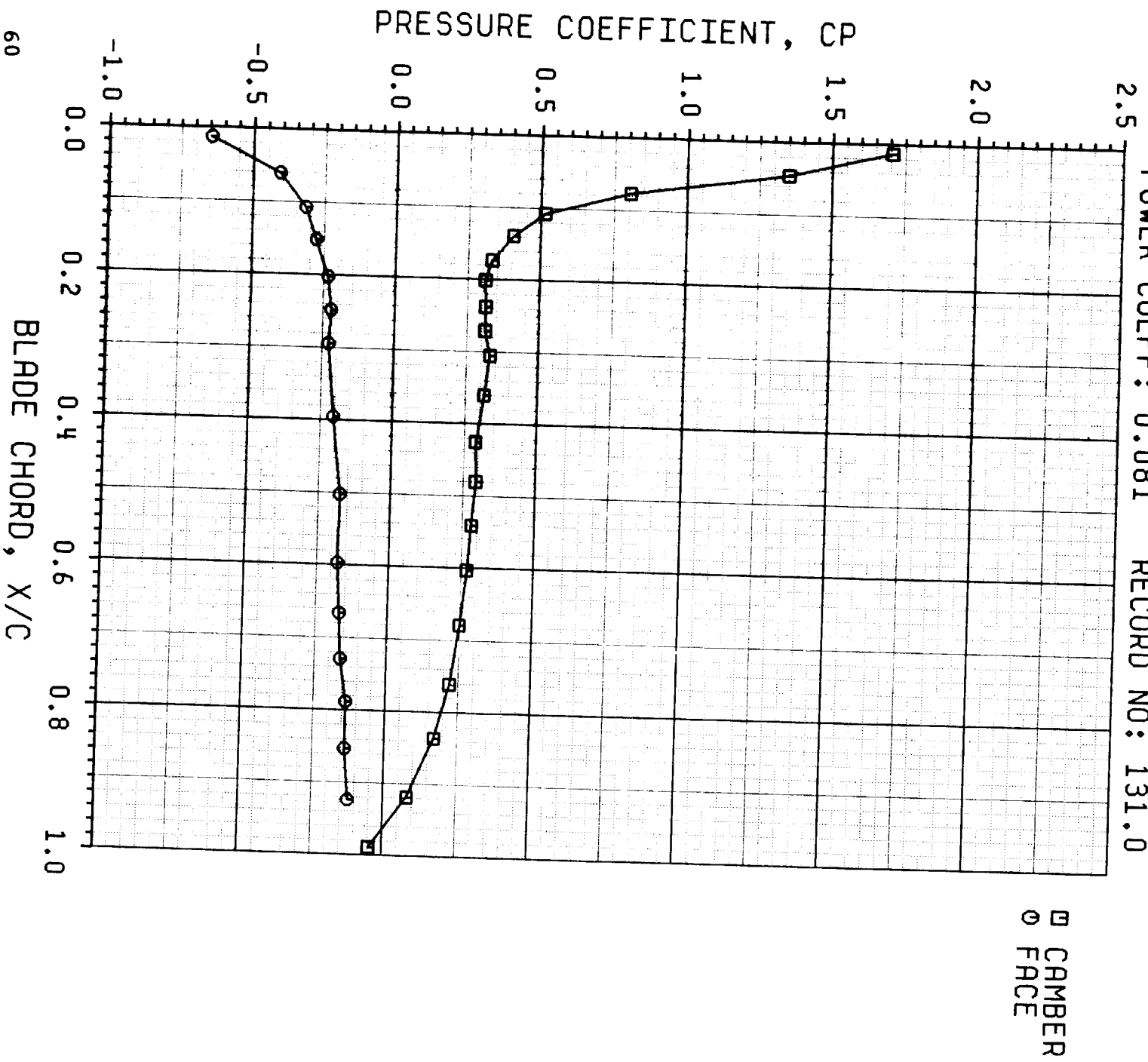
RADIAL STATION: 2

TUNNEL STATIC PRESSURE, PO: 88760.0 PA, 12.873 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	81708.2	11.850	3525.4	0.511	-2.000
0.046	82809.7	12.010	8476.5	0.504	-1.712
0.080	84092.6	12.196	8423.7	0.497	-1.868
0.115	85396.8	12.385	8879.8	0.490	-0.995
0.146	86341.6	12.522	8348.0	0.485	-0.723
0.178	86898.9	12.602	8286.0	0.477	-0.568
0.218	87163.0	12.641	3276.0	0.475	-0.487
0.244	87247.4	12.654	3252.8	0.472	-0.465
0.276	87275.9	12.658	3230.9	0.469	-0.459
0.308	87341.1	12.667	3217.2	0.467	-0.441
0.368	87410.4	12.677	3200.5	0.464	-0.422
0.442	87437.1	12.681	3191.4	0.463	-0.415
0.490	87500.9	12.690	3212.6	0.466	-0.392
0.553	87558.8	12.699	3242.4	0.470	-0.370
0.613	87646.6	12.712	3287.9	0.477	-0.339
0.688	87749.9	12.727	3363.4	0.488	-0.300
0.765	87942.4	12.755	8463.9	0.502	-0.286
0.838	88170.7	12.788	3585.5	0.520	-0.164
0.916	88481.9	12.833	3739.6	0.542	-0.074
0.987	88910.9	12.895	3895.4	0.565	0.039
FACE					
0.015	91617.5	18.288	3539.8	0.513	0.807
0.057	90698.2	13.154	3475.4	0.504	0.558
0.106	90216.8	13.084	3410.6	0.495	0.427
0.152	89987.2	13.051	3360.7	0.487	0.365
0.201	89792.4	13.023	3309.7	0.480	0.312
0.248	89756.6	13.018	3274.3	0.475	0.304
0.298	89684.0	13.007	3244.8	0.471	0.285
0.398	89522.2	12.984	3219.2	0.467	0.237
0.495	89450.1	12.973	3232.7	0.469	0.213
0.597	89394.4	12.965	3290.8	0.477	0.193
0.660	89420.5	12.969	3345.2	0.485	0.197
0.724	89401.2	12.966	3418.4	0.496	0.188
0.791	89416.2	12.968	3511.5	0.509	0.187
0.856	89377.4	12.963	3622.5	0.525	0.170
0.925	89262.6	12.946	3758.3	0.545	0.134
0.987	88965.0	12.903	3899.0	0.565	0.053

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.02    ADV. RATIO: 0.122  
POWER COEFF: 0.081    RECORD NO: 131.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 131.0

## WIND TUNNEL:

STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	89230.0 PA	12.941 PSI
AIR DENSITY:	1.09446 KG/M3	0.068327 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.76 M/S	22.17 FT/S

## PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1202.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.081	
BLADE ANGLE (@ X=41" STA):	14.4 DEG.	
BLADE CHORD:	0.573 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.587	
REL MACH NO. (@ MID CHORD):	0.303	

RUN DATE:	03-11-1987
RUN TIME:	20:18:50

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 181.0

RADIAL STATION: 3

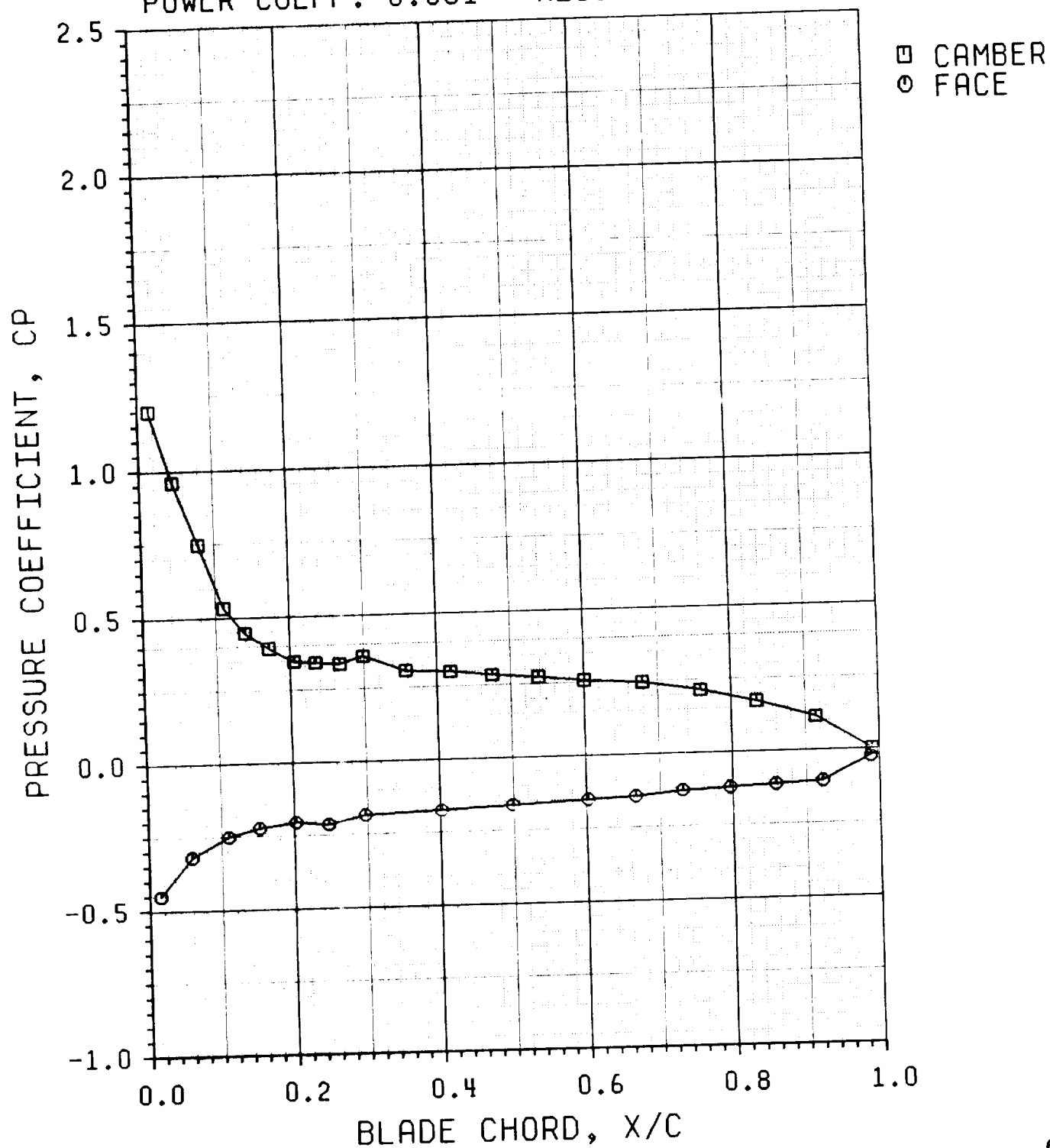
TUNNEL STATIC PRESSURE, P0: 89230.0 PA, 12.9±1 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	79693.8	11.558	5590.4	0.811	-1.706
0.046	81765.0	11.859	5528.8	0.802	-1.850
0.077	84823.4	12.302	5467.8	0.793	-0.806
0.107	86445.9	12.587	5417.4	0.786	-0.514
0.139	87062.2	12.627	5365.8	0.778	-0.404
0.178	87458.4	12.684	5314.5	0.771	-0.333
0.201	87594.5	12.704	5281.7	0.766	-0.310
0.238	87590.7	12.704	5240.6	0.760	-0.313
0.271	87605.7	12.706	5211.2	0.756	-0.812
0.305	87510.9	12.692	5189.1	0.753	-0.331
0.360	87612.1	12.707	5158.2	0.748	-0.314
0.425	87745.2	12.726	5145.1	0.746	-0.289
0.480	87722.2	12.723	5148.9	0.746	-0.293
0.541	87773.7	12.730	5174.0	0.750	-0.281
0.608	87830.8	12.788	5209.7	0.756	-0.269
0.679	87912.1	12.750	5292.8	0.768	-0.249
0.761	88043.8	12.769	5403.7	0.784	-0.220
0.836	88280.2	12.804	5539.0	0.803	-0.171
0.919	88764.8	12.874	5716.7	0.829	-0.081
0.989	89508.3	12.982	5893.9	0.855	0.047
FACE					
0.013	92840.5	13.465	5600.7	0.812	0.645
0.061	91486.0	13.268	5511.0	0.799	0.409
0.107	90949.1	13.191	5430.3	0.788	0.317
0.151	90726.2	13.158	5362.4	0.778	0.279
0.202	90469.9	13.121	5297.4	0.768	0.234
0.248	90389.2	13.109	5246.6	0.761	0.221
0.294	90416.2	13.113	5208.8	0.755	0.228
0.395	90286.3	13.094	5159.5	0.748	0.205
0.502	90134.1	13.072	5167.8	0.750	0.175
0.597	90157.3	13.076	5212.4	0.756	0.178
0.666	90118.6	13.069	5284.9	0.766	0.167
0.729	90087.8	13.066	5353.7	0.776	0.160
0.788	89976.0	13.049	5446.0	0.790	0.137
0.853	89998.6	13.053	5570.2	0.808	0.138
0.924	89932.1	13.048	5722.8	0.830	0.123
0.988	*****	*****	5887.2	0.854	*****

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4    MACH NO: 0.03    ADV. RATIO: 0.184

POWER COEFF: 0.081    RECORD NO: 195.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 195.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	88710.0 PA	12.866 PSI
AIR DENSITY:	1.07297 KG/M3	0.066985 LBF/FT3
SPEED OF SOUND:	840.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.21 M/S	33.49 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1199.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.081	
BLADE ANGLE (@ X=41" STA):	14.0 DEG.	
BLADE CHORD:	0.568 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.680	
REL MACH NO. (@ MID CHORD):	0.348	

RUN DATE:	03-13-1987
RUN TIME:	17:18:46



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 195.0

RADIAL STATION: 4

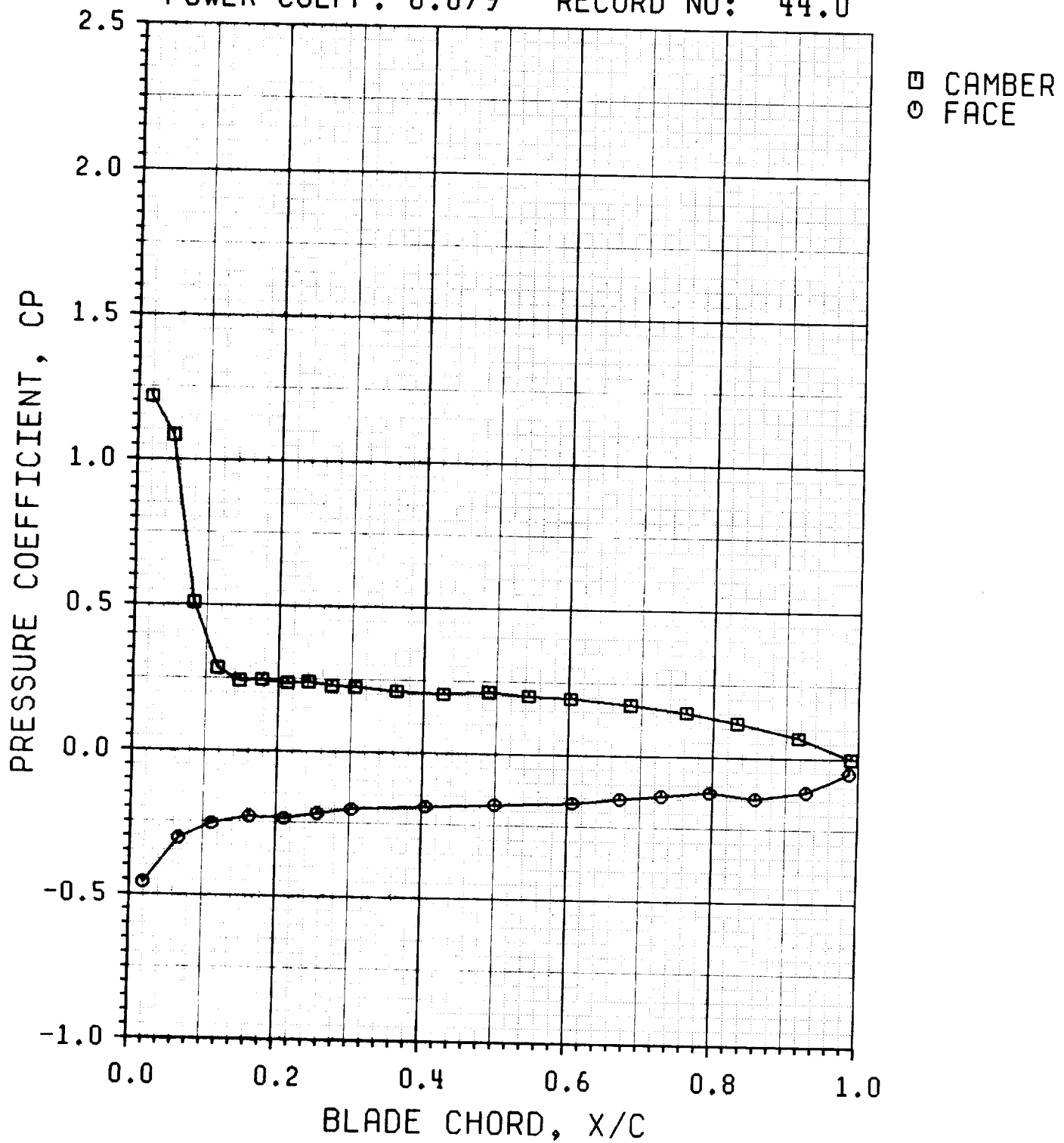
TUNNEL STATIC PRESSURE, PO: 88710.0 PA, 12.866 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	79913.6	11.590	7328.3	1.063	-1.200
0.045	81727.0	11.853	7273.9	1.055	-0.960
0.078	83315.2	12.088	7212.9	1.046	-0.748
0.111	84900.7	12.313	7159.2	1.038	-0.532
0.139	85533.8	12.405	7118.7	1.032	-0.446
0.171	85938.7	12.464	7074.2	1.026	-0.392
0.205	86278.9	12.513	7035.2	1.020	-0.346
0.234	86318.4	12.519	7004.3	1.016	-0.341
0.267	86369.0	12.526	6979.6	1.012	-0.335
0.299	86210.6	12.503	6954.7	1.009	-0.359
0.357	86588.7	12.558	6929.9	1.005	-0.306
0.418	86638.9	12.565	6920.2	1.004	-0.299
0.475	86743.1	12.581	6927.6	1.005	-0.284
0.538	86808.9	12.590	6956.7	1.009	-0.273
0.600	86910.2	12.605	6999.4	1.015	-0.257
0.679	86975.4	12.614	7088.8	1.028	-0.245
0.758	87165.9	12.642	7206.7	1.045	-0.214
0.834	87444.8	12.682	7353.3	1.066	-0.172
0.914	87853.6	12.742	7539.5	1.093	-0.114
0.990	88707.2	12.865	7740.7	1.123	0.000
FACE					
0.015	92023.4	13.346	7343.3	1.065	0.451
0.059	91038.1	13.203	7265.8	1.054	0.320
0.110	90509.0	13.127	7179.7	1.041	0.251
0.152	90298.0	13.096	7119.2	1.033	0.223
0.202	90158.7	13.076	7063.0	1.024	0.205
0.247	90209.7	13.083	7017.8	1.018	0.214
0.297	90001.4	13.053	6981.5	1.013	0.185
0.402	89934.2	13.043	6944.7	1.007	0.176
0.499	89854.1	13.032	6968.6	1.011	0.164
0.602	89787.7	13.022	7035.6	1.020	0.153
0.667	89739.4	13.015	7091.0	1.028	0.145
0.731	89634.2	13.000	7186.5	1.042	0.129
0.796	89605.9	12.996	7299.1	1.059	0.123
0.858	89562.1	12.989	7418.8	1.076	0.115
0.922	89523.6	12.984	7566.3	1.097	0.108
0.988	88910.2	12.895	7740.7	1.123	0.026

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.01 ADV. RATIO: 0.061

POWER COEFF: 0.079 RECORD NO: 44.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 44.0

## WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	89290.0 PA	12.950 PSI
AIR DENSITY:	1.09906 KG/M3	0.068614 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.37 M/S	11.07 FT/S

## PROPFAN:

RADIAL STATION:	5	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.061	
POWER COEFFICIENT:	0.079	
BLADE ANGLE (@ X=41" STA):	13.8 DEG.	
BLADE CHORD:	0.531 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.745	
REL MACH NO. (@ MID CHORD):	0.384	

RUN DATE:	03-06-1987
RUN TIME:	15:46:33

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 44.0

RADIAL STATION: 5

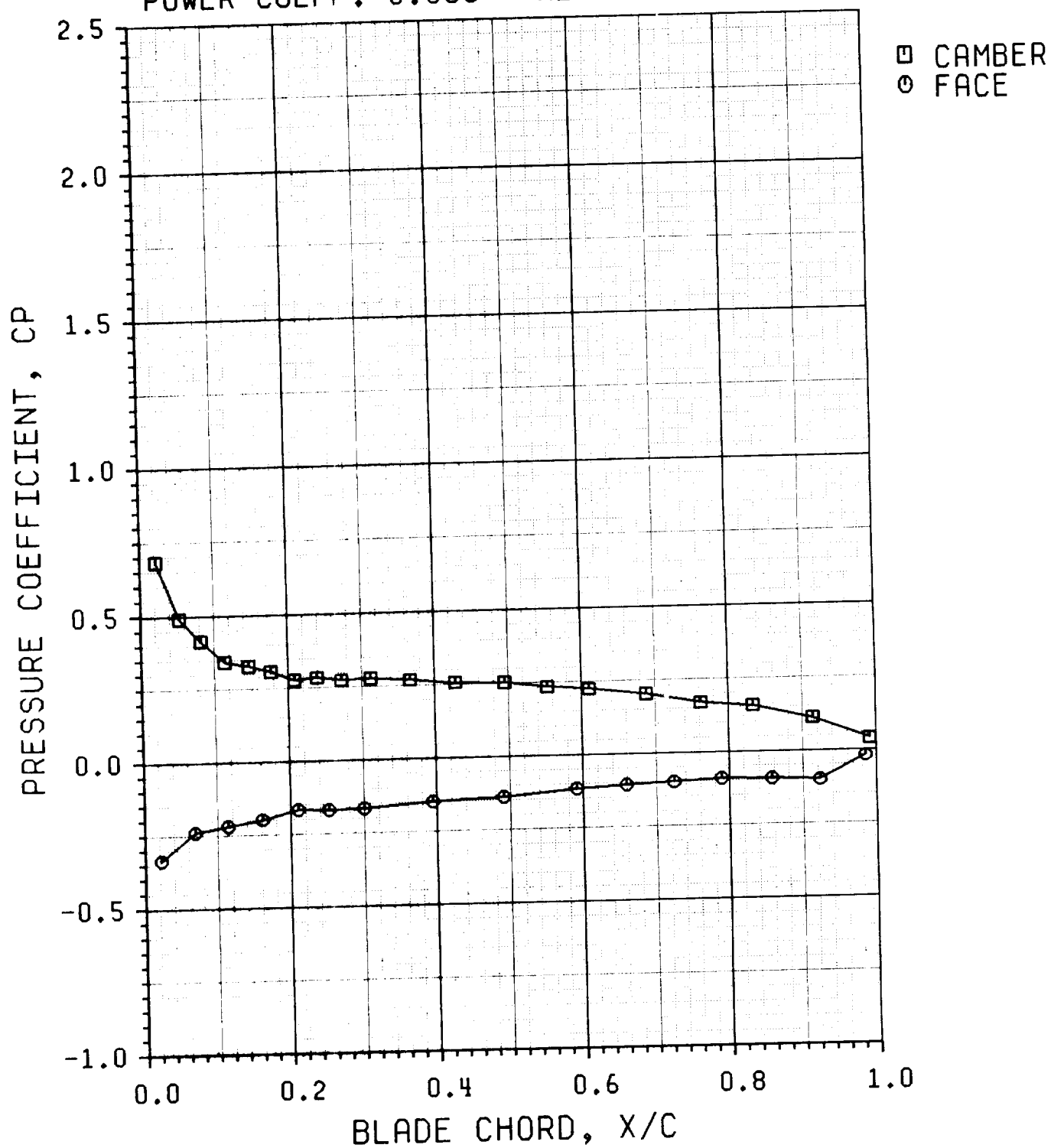
TUNNEL STATIC PRESSURE, PO: 89290.0 PA, 12.950 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	78370.6	11.366	8984.7	1.303	-1.215
0.050	79620.7	11.548	8938.0	1.296	-1.082
0.082	84790.7	12.297	8880.9	1.288	-0.507
0.116	86772.2	12.585	8835.2	1.281	-0.285
0.146	87153.3	12.640	8796.9	1.276	-0.243
0.177	87185.7	12.638	8763.2	1.271	-0.246
0.212	87233.7	12.652	8731.1	1.266	-0.236
0.241	87196.2	12.646	8708.8	1.268	-0.240
0.273	87320.2	12.664	8687.4	1.260	-0.227
0.305	87349.9	12.669	8671.2	1.258	-0.224
0.362	87465.4	12.685	8657.8	1.256	-0.211
0.427	87520.4	12.693	8659.2	1.256	-0.204
0.489	87442.9	12.682	8678.1	1.258	-0.213
0.544	87543.1	12.697	8705.5	1.263	-0.201
0.602	87589.0	12.703	8760.1	1.270	-0.194
0.685	87743.2	12.726	8855.2	1.284	-0.175
0.762	87935.6	12.754	8973.2	1.301	-0.151
0.832	88224.7	12.795	9104.0	1.320	-0.117
0.917	88651.6	12.857	9295.8	1.348	-0.069
0.990	89305.7	12.952	9483.4	1.375	0.002
FACE					
0.019	93417.2	13.549	8995.5	1.305	0.459
0.067	92028.2	13.346	8915.5	1.293	0.307
0.112	91556.3	13.279	8846.6	1.283	0.256
0.163	91314.6	13.244	8788.8	1.275	0.230
0.211	91356.2	13.250	8747.7	1.269	0.286
0.256	91187.0	13.225	8716.2	1.264	0.218
0.303	91089.1	13.204	8690.4	1.260	0.201
0.405	90923.8	13.187	8666.7	1.257	0.189
0.500	90849.4	13.176	8690.7	1.260	0.179
0.607	90770.8	13.165	8777.8	1.273	0.169
0.672	90635.5	13.145	8846.9	1.283	0.152
0.729	90539.3	13.131	8932.2	1.295	0.140
0.796	90429.9	13.115	9042.5	1.311	0.126
0.858	90618.7	13.143	9161.0	1.329	0.145
0.928	90406.6	13.112	9321.3	1.352	0.120
0.987	89780.1	13.021	9474.7	1.374	0.052

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6    MACH NO: 0.02    ADV. RATIO: 0.122

POWER COEFF: 0.080    RECORD NO: 182.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 182.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	49.7 F
STATIC PRESSURE:	88920.0 PA	12.896 PSI
AIR DENSITY:	1.09451 KG/M3	0.068330 LBF/FT3
SPEED OF SOUND:	837.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.75 M/S	22.13 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1202.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.080	
BLADE ANGLE (@ X=41" STA):	14.0 DEG.	
BLADE CHORD:	0.468 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.808	
REL MACH NO. (@ MID CHORD):	0.418	

RUN DATE:	03-13-1987
RUN TIME:	13:24:15

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 182.0

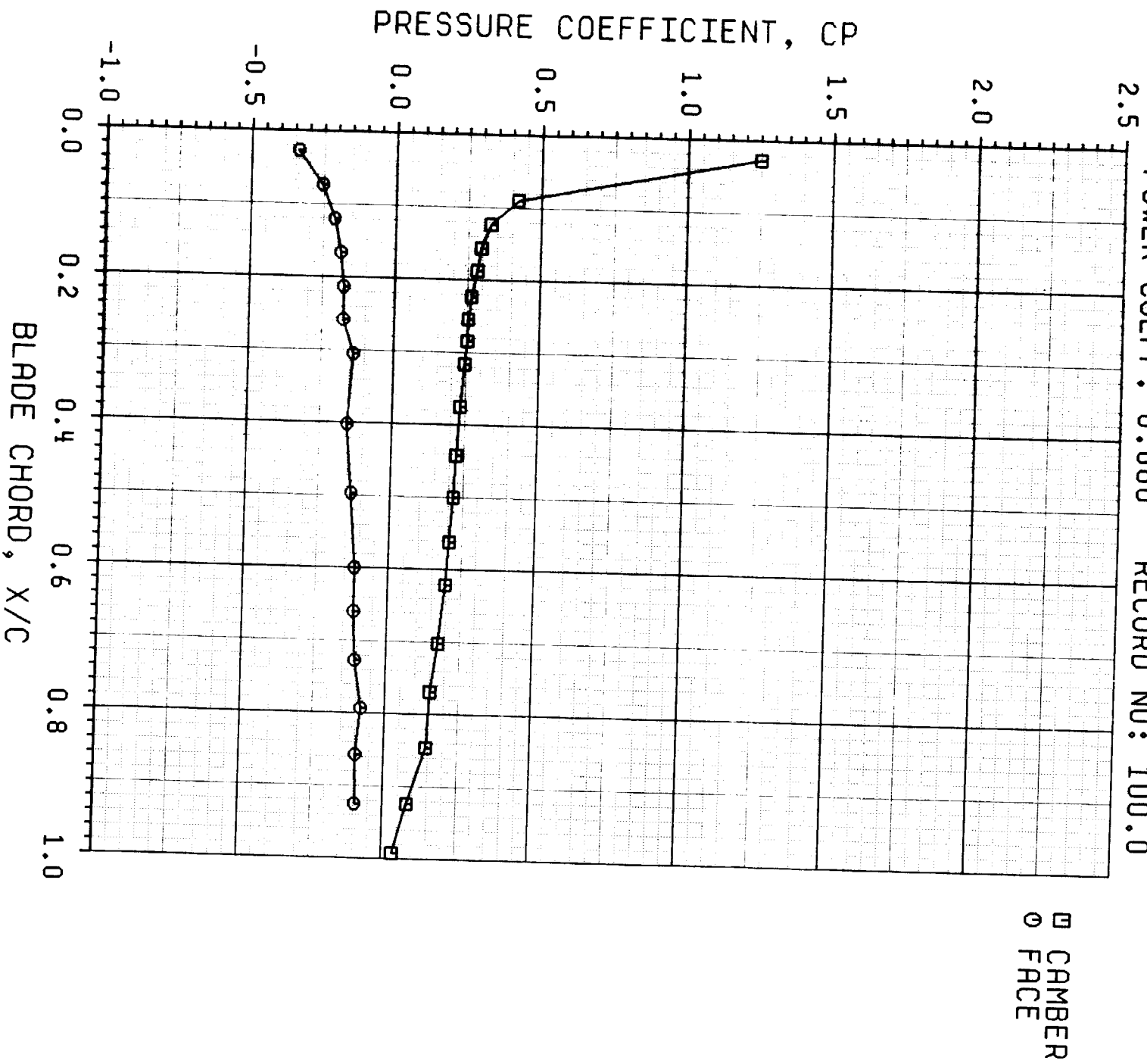
RADIAL STATION: 6

TUNNEL STATIC PRESSURE, PO: 88920.0 PA, 12.896 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	81723.7	11.853	10543.4	1.529	-0.683
0.053	83766.2	12.149	10511.9	1.525	-0.490
0.082	84571.2	12.266	10485.6	1.521	-0.415
0.114	85337.0	12.377	10467.3	1.518	-0.342
0.146	85488.2	12.399	10447.1	1.515	-0.328
0.176	85710.9	12.431	10420.8	1.511	-0.308
0.208	86028.2	12.476	10407.1	1.509	-0.278
0.239	85970.7	12.469	10400.9	1.508	-0.284
0.272	86070.2	12.483	10391.6	1.507	-0.274
0.312	86037.5	12.478	10389.8	1.507	-0.277
0.366	86120.6	12.490	10395.6	1.508	-0.269
0.428	86256.6	12.510	10416.0	1.511	-0.256
0.495	86276.6	12.513	10444.7	1.515	-0.253
0.553	86462.7	12.540	10484.6	1.521	-0.234
0.610	86560.3	12.554	10537.0	1.528	-0.224
0.688	86768.7	12.584	10631.8	1.542	-0.202
0.762	87103.1	12.633	10742.9	1.558	-0.169
0.833	87224.5	12.650	10866.6	1.576	-0.156
0.914	87699.9	12.719	11025.0	1.599	-0.111
0.991	88479.0	12.832	11196.5	1.624	-0.039
FACE					
0.022	92453.6	13.409	10547.6	1.530	0.335
0.069	91444.1	13.262	10501.8	1.523	0.240
0.114	91220.9	13.230	10465.7	1.518	0.220
0.161	91000.9	13.198	10432.6	1.513	0.199
0.210	90663.7	13.149	10413.6	1.510	0.167
0.252	90687.8	13.153	10399.3	1.508	0.170
0.300	90667.9	13.150	10387.3	1.506	0.168
0.394	90480.0	13.123	10400.6	1.508	0.150
0.491	90380.8	13.108	10440.2	1.514	0.140
0.591	90163.9	13.077	10524.5	1.526	0.118
0.659	90063.1	13.062	10598.5	1.536	0.108
0.724	89997.2	13.053	10681.9	1.549	0.101
0.789	89915.8	13.041	10778.8	1.563	0.092
0.857	89960.6	13.047	10907.2	1.582	0.095
0.923	90033.9	13.058	11041.4	1.601	0.101
0.985	89159.4	12.931	11181.1	1.622	0.021

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7    MACH NO: 0.01    ADV. RATIO: 0.061  
POWER COEFF: 0.080    RECORD NO: 100.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 100.0

## WIND TUNNEL:

STATIC TEMPERATURE:	293.0 K	67.7 F
STATIC PRESSURE:	89020.0 PA	12.911 PSI
AIR DENSITY:	1.05834 KG/M3	0.066072 LBF/FT3
SPEED OF SOUND:	343.16 M/S	1125.90 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.43 M/S	11.26 FT/S

## PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1212.0	
ADVANCE RATIO:	0.061	
POWER COEFFICIENT:	0.080	
BLADE ANGLE (@ X=41" STA):	14.7 DEG.	
BLADE CHORD:	0.397 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.884 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.860	
REL MACH NO. (@ MID CHORD):	0.441	

RUN DATE:	03-10-1987
RUN TIME:	18:03:50

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 100.0

RADIAL STATION: 7

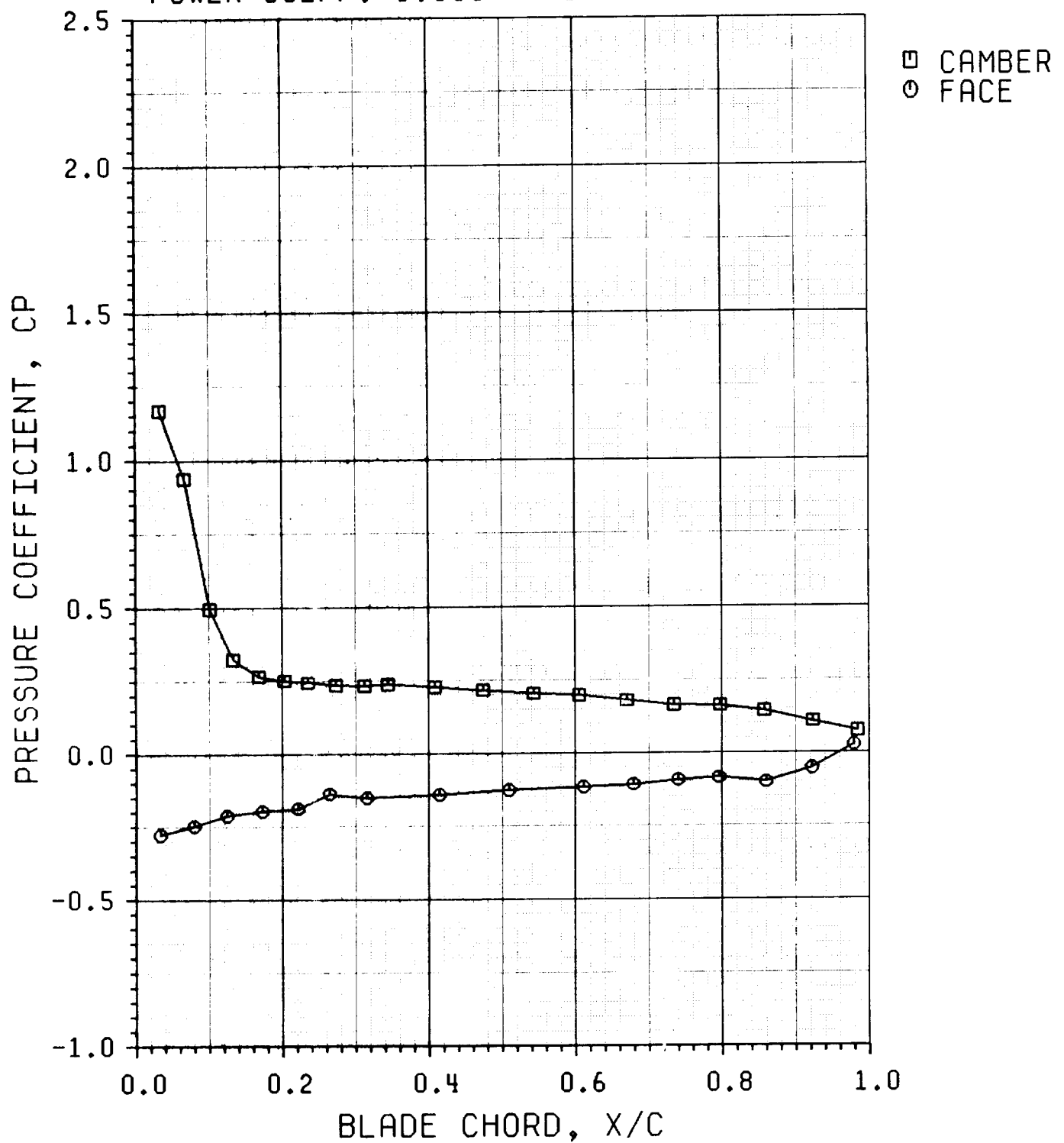
TUNNEL STATIC PRESSURE, P0: 89020.0 PA, 12.911 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	74351.4	10.783	11739.2	1.703	-1.250
0.061	*****	*****	11729.7	1.701	*****
0.090	84106.7	12.198	11723.6	1.700	-0.419
0.128	85191.0	12.355	11714.2	1.699	-0.327
0.156	85568.6	12.410	11706.1	1.698	-0.295
0.187	85717.4	12.432	11697.3	1.696	-0.282
0.223	85934.8	12.463	11702.7	1.697	-0.264
0.254	86044.1	12.479	11710.0	1.698	-0.254
0.284	86061.1	12.482	11711.3	1.699	-0.253
0.316	86147.0	12.494	11718.8	1.700	-0.245
0.375	86289.8	12.515	11735.8	1.702	-0.238
0.442	86891.2	12.530	11767.9	1.707	-0.223
0.500	86472.8	12.541	11811.4	1.718	-0.216
0.562	86570.4	12.556	11863.2	1.721	-0.206
0.621	86685.1	12.572	11916.3	1.728	-0.196
0.702	86902.6	12.604	12018.0	1.743	-0.176
0.769	87182.9	12.644	12102.9	1.755	-0.152
0.846	87279.8	12.658	12217.9	1.772	-0.142
0.924	88013.4	12.765	12351.9	1.791	-0.081
0.992	88583.0	12.847	12478.7	1.810	-0.035
FACE					
0.027	92997.1	13.488	11733.9	1.702	0.339
0.074	91995.1	13.342	11723.8	1.700	0.254
0.120	91493.9	13.270	11702.5	1.697	0.211
0.166	91221.6	13.230	11705.4	1.698	0.188
0.213	91081.6	13.210	11691.5	1.696	0.176
0.258	91067.0	13.208	11700.3	1.697	0.175
0.305	90636.7	13.145	11710.1	1.698	0.138
0.402	90831.7	13.174	11747.1	1.704	0.154
0.497	90604.4	13.141	11809.8	1.713	0.134
0.600	90397.6	13.111	11893.1	1.725	0.116
0.660	90389.6	13.109	11955.0	1.734	0.115
0.727	90319.7	13.099	12041.6	1.746	0.108
0.793	90030.0	13.057	12137.6	1.760	0.083
0.857	90220.7	13.085	12240.1	1.775	0.098
0.925	90204.8	13.083	12357.2	1.792	0.096
0.983	*****	*****	12470.7	1.809	*****

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.02    ADV. RATIO: 0.121

POWER COEFF: 0.080    RECORD NO: 168.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 168.0

WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	89290.0 PA	12.950 PSI
AIR DENSITY:	1.09906 KG/M3	0.068614 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.75 M/S	22.13 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1204.0	
ADVANCE RATIO:	0.121	
POWER COEFFICIENT:	0.080	
BLADE ANGLE (@ X=41" STA):	14.0 DEG.	
BLADE CHORD:	0.326 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.908	
REL MACH NO. (@ MID CHORD):	0.468	

RUN DATE:	03-12-1987
RUN TIME:	19:53:40

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 168.0

RADIAL STATION: 8

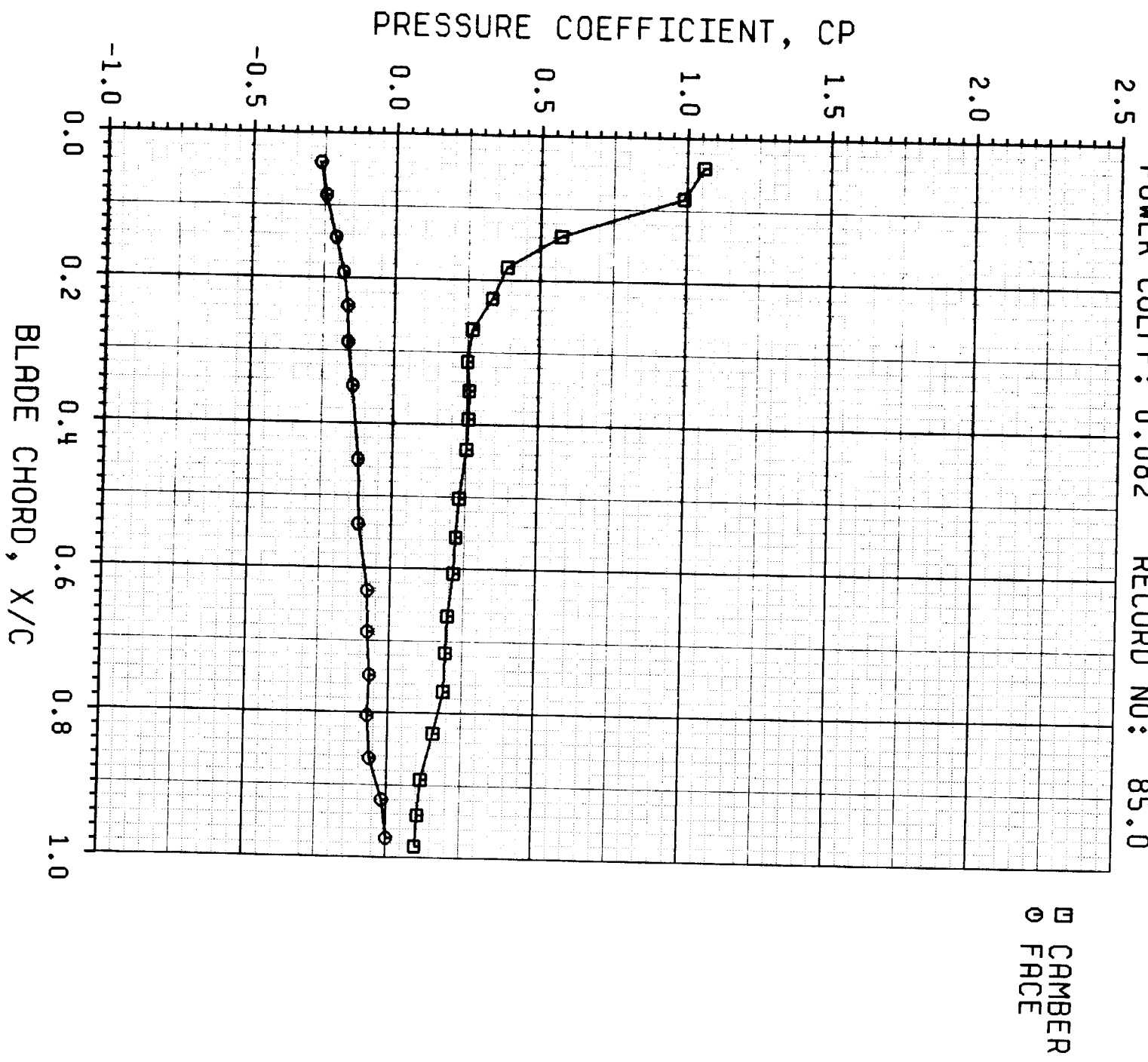
TUNNEL STATIC PRESSURE, P0: 89290.0 PA, 12.950 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	73746.5	10.696	13820.3	1.932	-1.167
0.067	76810.7	11.140	13819.7	1.932	-0.937
0.101	82692.1	11.993	13819.6	1.932	-0.495
0.133	84967.6	12.323	13822.7	1.932	-0.324
0.168	85740.4	12.435	13835.8	1.934	-0.266
0.203	85942.5	12.464	13337.9	1.934	-0.251
0.235	86035.1	12.478	13342.6	1.935	-0.244
0.278	86149.1	12.494	13861.3	1.938	-0.235
0.312	86166.5	12.497	13379.2	1.940	-0.233
0.344	86115.6	12.490	13392.9	1.942	-0.237
0.408	86238.7	12.507	13429.1	1.948	-0.227
0.474	86374.6	12.527	13470.3	1.954	-0.216
0.543	86526.7	12.549	13519.7	1.961	-0.204
0.605	86610.6	12.561	13581.4	1.970	-0.197
0.670	86841.4	12.595	13645.5	1.979	-0.179
0.734	87060.5	12.627	13713.7	1.989	-0.163
0.797	87062.9	12.627	13798.5	2.001	-0.161
0.857	87315.7	12.664	13867.9	2.011	-0.142
0.923	87805.8	12.735	13973.4	2.027	-0.106
0.984	88260.7	12.801	14058.6	2.039	-0.073
FACE					
0.033	92983.1	13.486	13312.4	1.931	0.277
0.079	92583.0	13.428	13312.4	1.931	0.247
0.124	92120.4	13.360	13321.5	1.932	0.212
0.172	91922.1	13.332	13323.2	1.932	0.198
0.221	91815.5	13.316	13328.4	1.933	0.189
0.264	91144.8	13.219	13345.7	1.936	0.139
0.315	91318.1	13.244	13366.4	1.939	0.152
0.414	91205.8	13.228	13421.0	1.946	0.143
0.509	91000.3	13.198	13486.7	1.956	0.127
0.611	90893.6	13.183	13578.9	1.969	0.118
0.679	90776.1	13.165	13644.9	1.979	0.109
0.740	90579.2	13.137	13712.0	1.989	0.094
0.796	90480.4	13.123	13781.1	1.999	0.086
0.860	90695.1	13.154	13865.8	2.011	0.101
0.922	90056.4	13.061	13967.0	2.026	0.055
0.979	88934.7	12.898	14054.8	2.038	-0.025

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9    MACH NO: 0.01    ADV. RATIO: 0.061

POWER COEFF: 0.082    RECORD NO: 85.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 85.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	88940.0 PA	12.899 PSI
AIR DENSITY:	1.07950 KG/M3	0.067393 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.40 M/S	11.14 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1201.0	
ADVANCE RATIO:	0.061	
POWER COEFFICIENT:	0.082	
BLADE ANGLE (@ X=41" STA):	14.6 DEG.	
BLADE CHORD:	0.259 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.938	
REL MACH NO. (@ MID CHORD):	0.481	

RUN DATE:	08-10-1987
RUN TIME:	14:19:39

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 85.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, P0: 88940.0 PA, 12.899 PSI

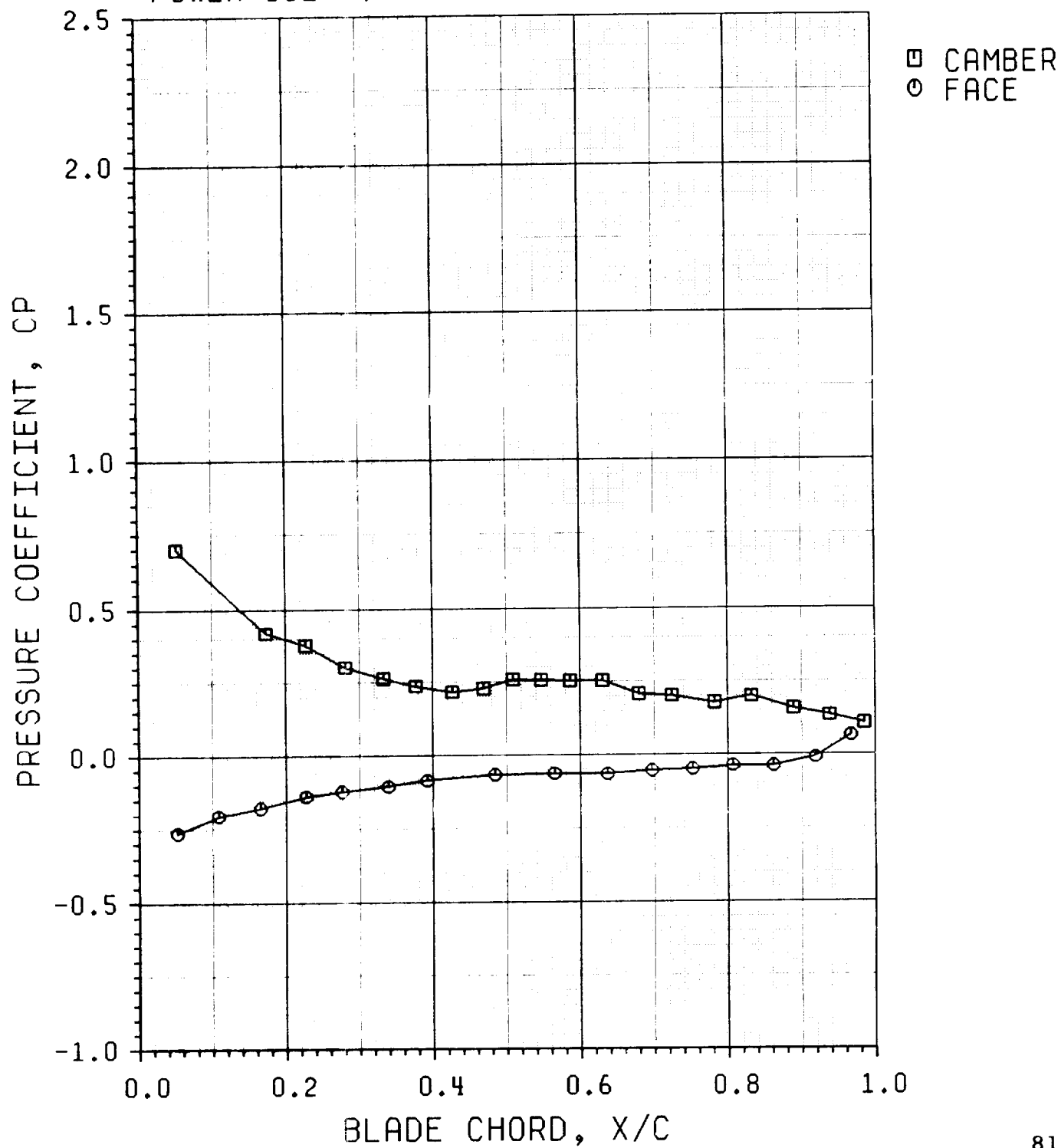
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	74043.4	10.739	14098.0	2.046	-1.057
0.084	74983.7	10.875	14111.4	2.047	-0.989
0.138	80898.9	11.782	14124.4	2.049	-0.570
0.182	83505.3	12.111	14134.2	2.050	-0.385
0.225	84210.7	12.218	14153.7	2.053	-0.334
0.268	85163.6	12.851	14161.0	2.054	-0.267
0.313	85378.2	12.383	14182.6	2.057	-0.251
0.353	85264.9	12.866	14199.4	2.059	-0.259
0.392	85270.2	12.367	14221.7	2.063	-0.258
0.434	85345.6	12.378	14241.3	2.065	-0.252
0.502	85652.0	12.422	14282.2	2.071	-0.230
0.556	85768.8	12.439	14319.3	2.077	-0.221
0.606	85850.1	12.451	14361.6	2.083	-0.215
0.665	86096.7	12.487	14398.8	2.088	-0.197
0.716	86147.4	12.494	14442.7	2.095	-0.193
0.770	86228.9	12.506	14485.1	2.101	-0.187
0.828	86683.9	12.572	14543.9	2.109	-0.155
0.892	87255.6	12.655	14605.2	2.118	-0.115
0.941	87385.2	12.674	14654.5	2.125	-0.106
0.984	87491.0	12.689	14696.0	2.131	-0.099
FACE					
0.041	92655.5	13.438	14096.7	2.044	0.264
0.086	92385.0	13.399	14108.5	2.046	0.244
0.144	91886.4	13.327	14118.6	2.048	0.209
0.192	91496.8	13.270	14132.6	2.050	0.181
0.238	91269.7	13.237	14147.6	2.052	0.165
0.288	91233.0	13.232	14167.0	2.055	0.162
0.348	90978.7	13.195	14195.1	2.059	0.144
0.450	90664.6	13.149	14243.9	2.066	0.121
0.539	90600.9	13.140	14308.5	2.075	0.116
0.631	90086.2	13.065	14368.2	2.084	0.080
0.688	90061.7	13.062	14415.9	2.091	0.078
0.748	89906.6	13.039	14463.0	2.098	0.067
0.804	90005.6	13.054	14520.7	2.106	0.073
0.863	89849.0	13.031	14574.6	2.114	0.062
0.920	89192.2	12.936	14632.4	2.122	0.017
0.973	88939.6	12.899	14688.8	2.130	0.000

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10 MACH NO: 0.03 ADV. RATIO: 0.184

POWER COEFF: 0.079 RECORD NO: 146.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 146.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	89170.0 PA	12.933 PSI
AIR DENSITY:	1.08607 KG/M3	0.067804 LBF/FT3
SPEED OF SOUND:	839.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.17 M/S	83.87 FT/S

## PROPFAN:

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RADIAL STATION:	10	
ROTOR SPEED (RPM):	1198.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.079	
BLADE ANGLE (@ X=41" STA):	18.5 DEG.	
BLADE CHORD:	0.206 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.964	
REL MACH NO. (@ MID CHORD):	0.495	

RUN DATE:	03-12-1987
RUN TIME:	18:34:11

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 146.0

RADIAL STATION: 10

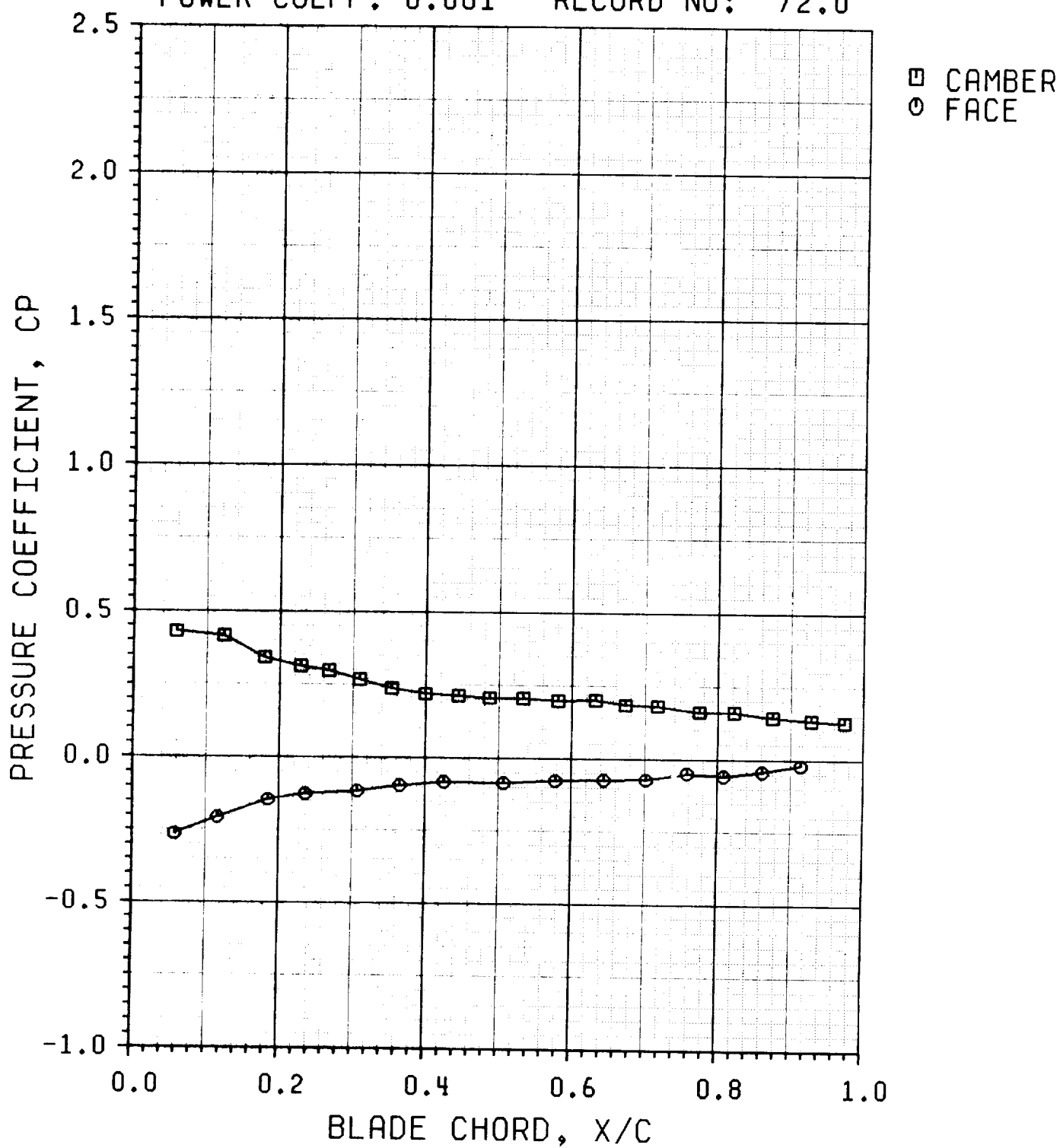
TUNNEL STATIC PRESSURE, PO: 89170.0 PA, 12.933 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	78631.8	11.404	15046.1	2.182	-0.700
0.118	*****	*****	15066.2	2.185	*****
0.173	82855.2	12.017	15079.1	2.187	-0.419
0.227	83464.9	12.105	15093.9	2.189	-0.378
0.281	84617.7	12.272	15118.4	2.192	-0.301
0.338	85191.4	12.356	15141.3	2.196	-0.263
0.377	85600.4	12.415	15150.5	2.197	-0.236
0.426	85893.9	12.457	15175.5	2.201	-0.216
0.469	85715.2	12.431	15202.0	2.205	-0.227
0.509	85263.6	12.366	15216.8	2.207	-0.257
0.547	85283.6	12.369	15237.7	2.210	-0.255
0.586	85309.2	12.373	15264.6	2.214	-0.253
0.630	85325.1	12.375	15281.1	2.216	-0.252
0.679	85986.2	12.471	15313.7	2.221	-0.208
0.724	86081.1	12.485	15344.2	2.225	-0.201
0.782	86451.8	12.538	15380.4	2.231	-0.177
0.832	86103.2	12.488	15418.0	2.236	-0.199
0.889	86750.2	12.582	15459.9	2.242	-0.157
0.938	87095.8	12.632	15503.3	2.248	-0.134
0.985	87505.9	12.691	15536.9	2.253	-0.107
FACE					
0.052	93122.6	13.506	15033.9	2.180	0.263
0.108	92241.5	13.378	15049.5	2.183	0.204
0.165	91852.5	13.322	15067.8	2.185	0.178
0.227	91267.4	13.237	15086.0	2.188	0.139
0.276	91020.2	13.201	15099.7	2.190	0.123
0.339	90773.6	13.165	15122.0	2.193	0.106
0.392	90470.1	13.121	15144.8	2.196	0.086
0.484	90191.4	13.081	15192.3	2.203	0.067
0.565	90137.9	13.073	15236.2	2.210	0.064
0.637	90175.7	13.078	15273.7	2.215	0.066
0.697	90018.8	13.056	15312.7	2.221	0.055
0.752	89932.9	13.043	15357.3	2.227	0.050
0.807	89769.3	13.019	15390.0	2.232	0.039
0.862	89781.9	13.021	15435.0	2.239	0.040
0.919	89338.2	12.957	15482.8	2.246	0.011
0.967	88159.6	12.786	15517.8	2.251	-0.065

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11 MACH NO: 0.01 ADV. RATIO: 0.061

POWER COEFF: 0.081 RECORD NO: 72.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 72.0

WIND TUNNEL:

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STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	88910.0 PA	12.395 PSI
AIR DENSITY:	1.09439 KG/M3	0.068322 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.37 M/S	11.07 FT/S

PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1199.0	
ADVANCE RATIO:	0.061	
POWER COEFFICIENT:	0.081	
BLADE ANGLE (@ X=41" STA):	14.0 DEG.	
BLADE CHORD:	0.186 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.503	

RUN DATE:	03-09-1987
RUN TIME:	20:45:05

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 72.0

RADIAL STATION: 11

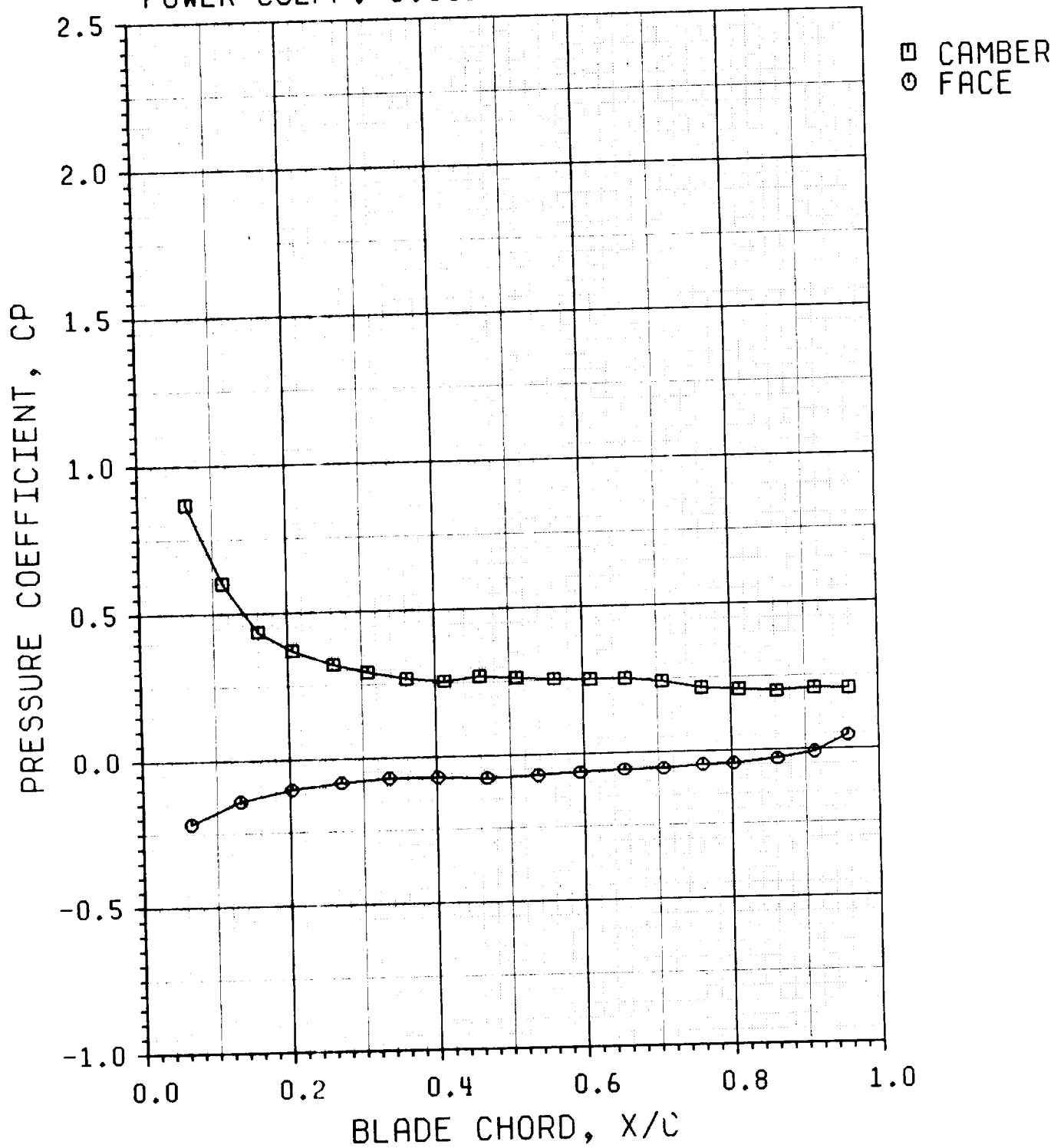
TUNNEL STATIC PRESSURE, PO: 88910.0 PA, 12.895 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	82266.9	11.931	15494.9	2.247	-0.429
0.123	82474.1	11.961	15528.6	2.251	-0.415
0.179	83603.8	12.125	15545.8	2.255	-0.341
0.228	84046.6	12.189	15563.0	2.257	-0.313
0.267	84283.7	12.224	15579.2	2.259	-0.297
0.309	84748.9	12.291	15588.0	2.261	-0.267
0.358	85204.4	12.357	15605.6	2.263	-0.287
0.399	85485.9	12.398	15624.9	2.266	-0.219
0.444	85596.4	12.414	15645.8	2.269	-0.212
0.487	85676.5	12.426	15669.1	2.273	-0.206
0.533	85693.9	12.428	15695.7	2.276	-0.205
0.581	85816.9	12.446	15720.9	2.280	-0.197
0.632	85768.4	12.489	15747.4	2.284	-0.200
0.678	86006.2	12.474	15772.0	2.287	-0.184
0.717	86056.8	12.481	15790.3	2.290	-0.181
0.774	86366.1	12.526	15828.9	2.296	-0.161
0.822	86376.7	12.527	15856.9	2.300	-0.160
0.875	86630.9	12.564	15889.3	2.304	-0.148
0.928	86811.2	12.590	15938.9	2.312	-0.132
0.974	86896.7	12.603	15967.3	2.316	-0.126
FACE					
0.058	93033.2	13.493	15493.5	2.247	0.266
0.116	92126.2	13.361	15513.2	2.250	0.207
0.185	91173.9	13.223	15529.1	2.252	0.146
0.236	90869.9	13.179	15553.0	2.256	0.126
0.307	90696.7	13.154	15576.4	2.259	0.115
0.365	90891.4	13.110	15599.4	2.262	0.095
0.425	90188.4	13.080	15626.0	2.266	0.082
0.507	90237.8	13.087	15658.5	2.271	0.085
0.578	90099.0	13.067	15700.0	2.277	0.076
0.644	90055.0	13.061	15737.8	2.282	0.073
0.702	90035.5	13.058	15767.3	2.287	0.071
0.758	89687.2	13.008	15805.6	2.292	0.049
0.808	89819.7	13.027	15839.0	2.297	0.057
0.861	89573.7	12.991	15872.9	2.302	0.042
0.914	89247.7	12.944	15909.4	2.307	0.021
0.963	*****	*****	15945.3	2.313	*****

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.02    ADV. RATIO: 0.122

POWER COEFF: 0.081    RECORD NO: 117.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 117.0

WIND TUNNEL:

STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	88920.0 PA	12.896 PSI
AIR DENSITY:	1.08303 KG/M3	0.067613 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.78 M/S	22.25 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1208.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.081	
BLADE ANGLE (@ X=41" STA):	14.5 DEG.	
BLADE CHORD:	0.165 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.510	

RUN DATE:	03-11-1987
RUN TIME:	16:35:28



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 117.0

RADIAL STATION: 12

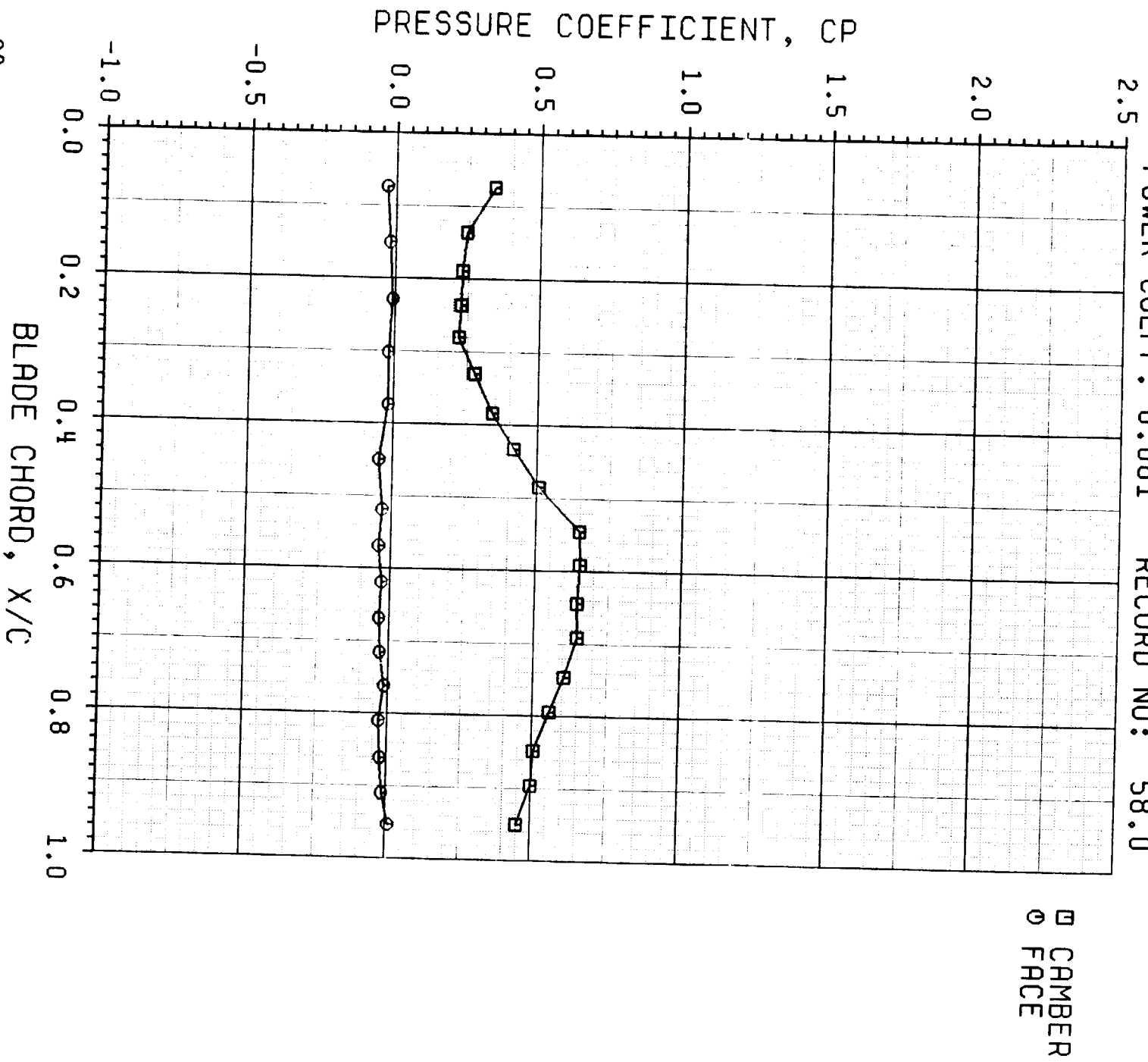
TUNNEL STATIC PRESSURE, PO: 88920.0 PA, 12.896 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	75060.7	10.886	15968.6	2.316	-0.868
0.118	79327.6	11.505	15989.5	2.319	-0.600
0.160	81942.5	11.884	16006.7	2.321	-0.436
0.206	82977.6	12.034	16019.2	2.823	-0.371
0.262	83779.8	12.151	16038.0	2.826	-0.321
0.308	84219.1	12.215	16049.1	2.328	-0.293
0.361	84633.5	12.275	16076.7	2.332	-0.267
0.412	84803.4	12.299	16090.8	2.334	-0.256
0.460	84569.4	12.265	16104.9	2.336	-0.270
0.510	84679.1	12.281	16133.3	2.340	-0.263
0.561	84788.8	12.297	16161.7	2.344	-0.256
0.610	84817.4	12.301	16191.6	2.348	-0.253
0.657	84833.4	12.304	16208.4	2.351	-0.252
0.707	85023.2	12.331	16234.0	2.354	-0.240
0.760	85419.7	12.389	16259.1	2.358	-0.215
0.811	85546.0	12.407	16287.2	2.362	-0.207
0.862	85673.0	12.425	16315.9	2.366	-0.199
0.913	85540.9	12.406	16350.7	2.371	-0.207
0.960	85559.9	12.409	16379.0	2.375	-0.205
FACE					
0.065	92388.0	13.399	15964.7	2.315	0.217
0.132	91192.0	13.226	15989.0	2.319	0.142
0.202	90599.4	13.140	16006.6	2.321	0.105
0.270	90277.3	13.093	16030.7	2.325	0.085
0.335	90068.8	13.063	16053.1	2.328	0.072
0.401	90076.8	13.064	16077.3	2.332	0.072
0.468	90187.1	13.080	16104.6	2.336	0.079
0.537	90082.0	13.065	16131.3	2.340	0.072
0.594	89983.5	13.051	16164.7	2.344	0.066
0.654	89878.5	13.035	16191.6	2.348	0.059
0.707	89846.1	13.031	16225.1	2.353	0.057
0.760	89689.9	13.008	16250.7	2.357	0.047
0.802	89650.7	13.002	16269.3	2.360	0.045
0.862	89425.5	12.970	16308.7	2.365	0.031
0.912	89085.6	12.920	16333.1	2.369	0.010
0.958	88198.1	12.792	16365.2	2.373	-0.044

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13    MACH NO: 0.01    ADV. RATIO: 0.061

POWER COEFF: 0.081    RECORD NO: 58.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 58.0

## WIND TUNNEL:

---

STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	88620.0 PA	12.853 PSI
AIR DENSITY:	1.08698 KG/M3	0.067860 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.38 M/S	11.08 FT/S

## PROPFAN:

---

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.061	
POWER COEFFICIENT:	0.081	
BLADE ANGLE (@ X=41" STA):	13.8 DEG.	
BLADE CHORD:	0.146 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.996	
REL MACH NO. (@ MID CHORD):	0.513	

RUN DATE:	03-09-1987
RUN TIME:	15:54:19

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 58.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 88620.0 PA, 12.853 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	83141.2	12.058	16169.7	2.345	-0.339
0.136	84666.6	12.279	16190.0	2.348	-0.244
0.189	84899.4	12.313	16191.3	2.348	-0.230
0.236	84940.7	12.319	16208.4	2.351	-0.227
0.280	85039.0	12.333	16224.6	2.353	-0.221
0.330	84102.7	12.198	16232.5	2.354	-0.278
0.384	83079.2	12.049	16253.6	2.357	-0.341
0.433	81837.0	11.869	16271.9	2.360	-0.417
0.485	80365.1	11.656	16283.9	2.362	-0.507
0.545	78041.3	11.319	16307.7	2.365	-0.649
0.591	77967.6	11.308	16327.5	2.368	-0.652
0.644	78073.7	11.323	16344.4	2.370	-0.645
0.691	78081.2	11.317	16362.1	2.373	-0.647
0.746	78698.9	11.414	16385.5	2.376	-0.605
0.794	79485.9	11.528	16412.2	2.380	-0.557
0.848	80328.1	11.650	16435.2	2.384	-0.505
0.896	80423.4	11.664	16457.9	2.387	-0.498
0.950	81196.1	11.776	16485.8	2.391	-0.450
FACE					
0.074	89143.9	12.929	16156.8	2.343	0.032
0.150	88938.7	12.899	16175.0	2.346	0.020
0.229	88769.4	12.874	16204.3	2.350	0.009
0.302	88956.2	12.902	16217.2	2.352	0.021
0.374	88923.2	12.897	16242.1	2.356	0.019
0.450	89395.9	12.965	16267.4	2.359	0.048
0.519	89150.2	12.930	16286.6	2.362	0.033
0.569	89302.4	12.952	16306.1	2.365	0.042
0.619	89108.6	12.924	16327.6	2.368	0.030
0.669	89214.4	12.939	16350.4	2.371	0.036
0.716	89126.8	12.926	16370.5	2.374	0.031
0.762	88854.9	12.887	16388.9	2.377	0.014
0.810	89104.1	12.923	16405.7	2.379	0.030
0.861	89013.9	12.910	16423.3	2.382	0.024
0.910	88875.1	12.890	16458.7	2.387	0.016
0.953	88482.0	12.833	16472.8	2.389	-0.008

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B2

(B2.1 through B2.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_{\infty} = 0.030 \pm 0.015$

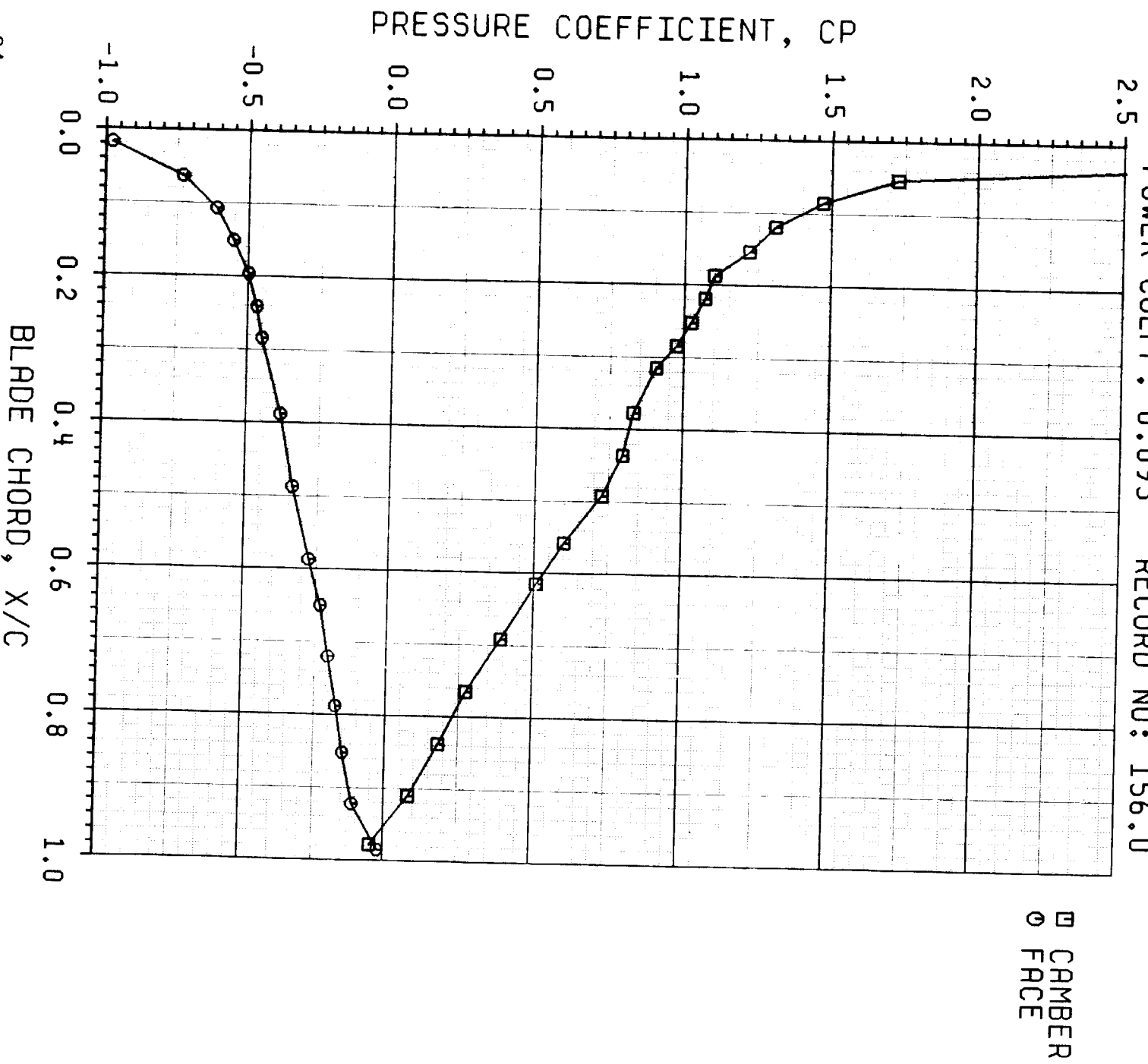
Advance Ratio,  $J = 0.123 \pm 0.062$

Power Coefficient,  $CP = 0.095 \pm 0.003$

Blade Angle,  $\beta = 15.2 \pm 0.8^{\circ}$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1    MACH NO: 0.03    ADV. RATIO: 0.184  
POWER COEFF: 0.093    RECORD NO: 156.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 156.0

## WIND TUNNEL:

STATIC TEMPERATURE:	289.0 K	60.5 F
STATIC PRESSURE:	89140.0 PA	12.928 PSI
AIR DENSITY:	1.07444 KG/M3	0.067077 LBF/FT3
SPEED OF SOUND:	340.81 M/S	1118.19 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.22 M/S	33.55 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1203.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.093	
BLADE ANGLE (@ X=41" STA):	14.6 DEG.	
BLADE CHORD:	0.475 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.334	
REL MACH NO. (@ MID CHORD):	0.173	

RUN DATE:	03-12-1987
RUN TIME:	16:18:55

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 156.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, PO: 89140.0 PA, 12.928 PSI

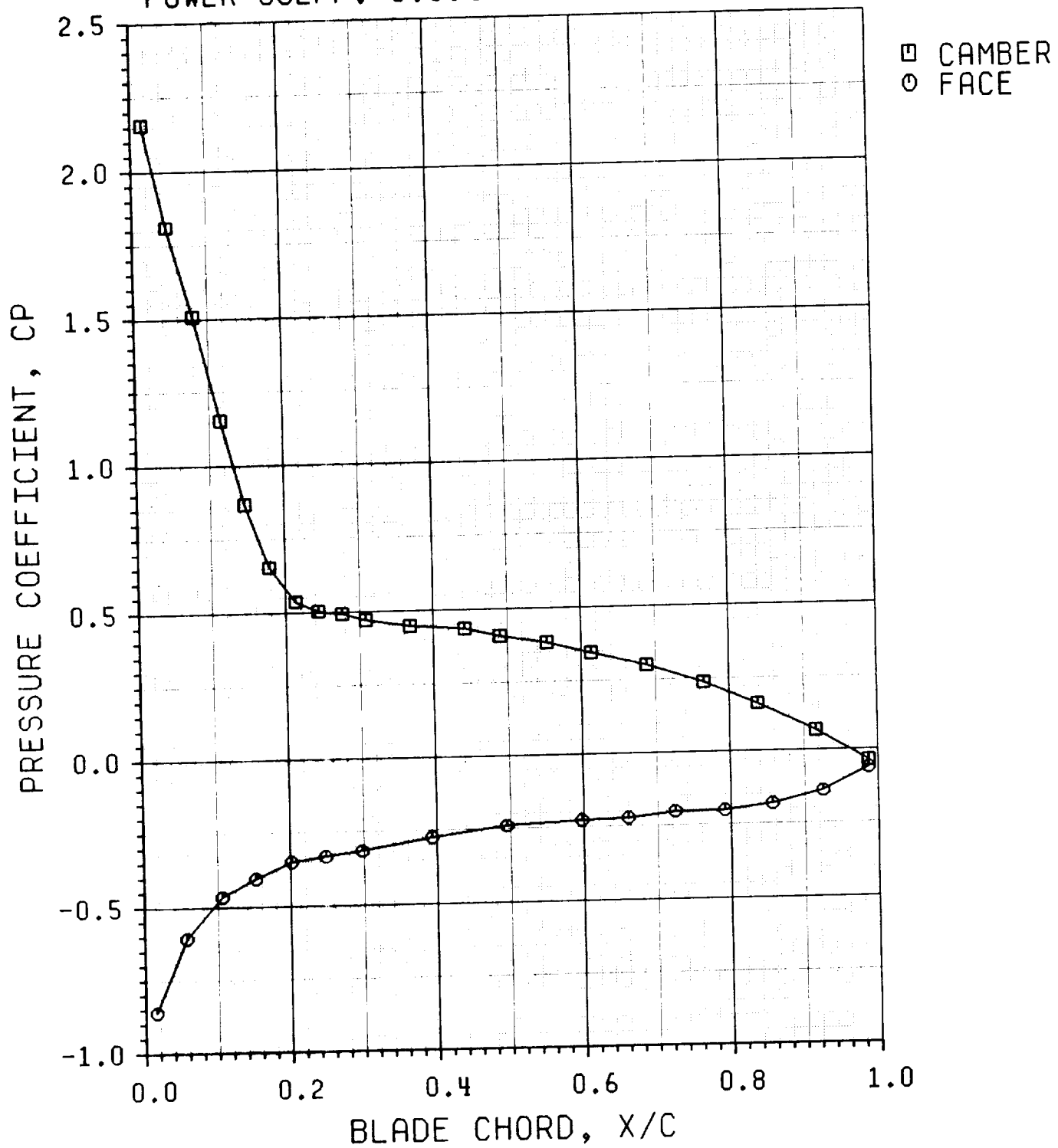
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	83789.1	12.152	1557.5	0.226	-8.486
0.053	86492.7	12.544	1532.6	0.222	-1.727
0.085	86920.6	12.606	1511.8	0.219	-1.469
0.119	87185.1	12.645	1495.1	0.217	-1.308
0.154	87338.8	12.667	1480.4	0.215	-1.217
0.187	87520.3	12.693	1472.6	0.214	-1.100
0.219	87571.1	12.701	1467.2	0.213	-1.069
0.252	87644.2	12.711	1463.2	0.212	-1.022
0.284	87713.8	12.721	1462.7	0.212	-0.975
0.315	87809.9	12.735	1467.9	0.213	-0.906
0.377	87908.9	12.750	1483.1	0.215	-0.830
0.436	87937.2	12.754	1511.7	0.219	-0.796
0.492	88025.7	12.767	1530.3	0.222	-0.728
0.558	88181.8	12.789	1596.1	0.231	-0.600
0.615	88300.7	12.806	1652.4	0.240	-0.508
0.692	88460.7	12.830	1785.9	0.252	-0.391
0.765	88634.7	12.855	1840.1	0.267	-0.275
0.838	88785.2	12.877	1949.0	0.283	-0.182
0.910	88967.6	12.903	2075.4	0.301	-0.083
0.978	89245.4	12.944	2205.0	0.320	0.048
FACE					
0.018	90676.4	13.151	1572.6	0.228	0.977
0.063	90279.1	13.093	1561.2	0.226	0.730
0.107	90085.9	13.065	1543.5	0.224	0.613
0.151	89984.6	13.051	1526.6	0.221	0.553
0.196	89897.3	13.038	1516.4	0.220	0.499
0.241	89848.3	13.031	1509.5	0.219	0.469
0.284	89816.3	13.026	1505.5	0.218	0.449
0.338	89720.9	13.012	1522.2	0.221	0.382
0.487	89668.7	13.005	1567.9	0.227	0.337
0.587	89593.8	12.994	1640.0	0.238	0.277
0.650	89537.1	12.986	1695.2	0.246	0.234
0.720	89502.8	12.981	1773.0	0.257	0.205
0.788	89467.8	12.976	1864.3	0.270	0.176
0.852	89431.8	12.971	1961.7	0.285	0.149
0.922	89374.6	12.962	2080.4	0.302	0.113
0.985	89186.6	12.935	2202.8	0.319	0.021

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.03    ADV. RATIO: 0.181

POWER COEFF: 0.094    RECORD NO: 207.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 207.0

WIND TUNNEL:

---

STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	88760.0 PA	12.873 PSI
AIR DENSITY:	1.10032 KG/M3	0.068693 LBF/FT3
SPEED OF SOUND:	836.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.08 M/S	33.08 FT/S

PROPFAN:

---

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1204.0	
ADVANCE RATIO:	0.181	
POWER COEFFICIENT:	0.094	
BLADE ANGLE (@ X=41" STA):	14.9 DEG.	
BLADE CHORD:	0.540 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.468	
REL MACH NO. (@ MID CHORD):	0.245	

RUN DATE:	03-13-1987
RUN TIME:	22:18:47

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 207.0

RADIAL STATION: 2

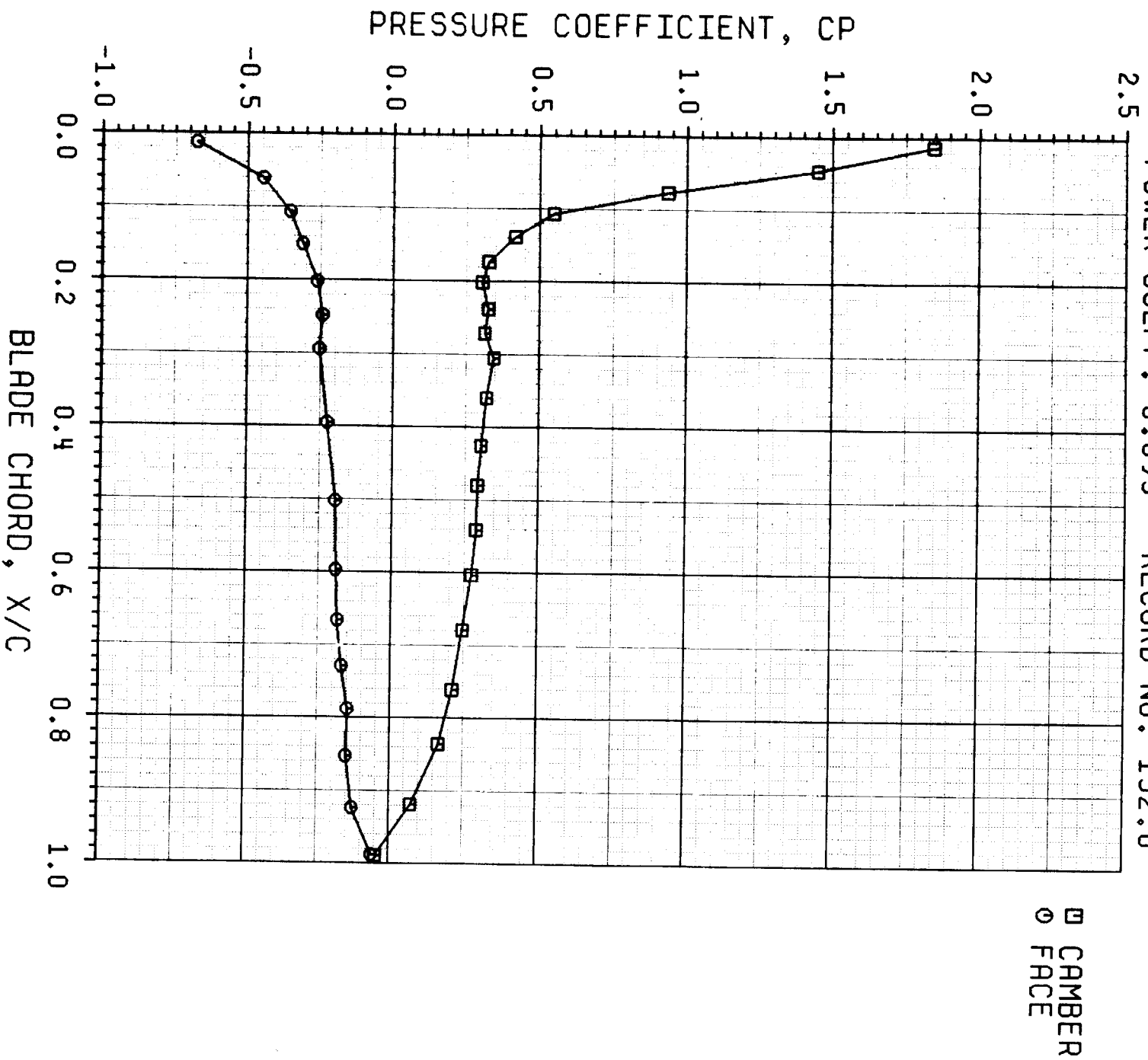
TUNNEL STATIC PRESSURE, PO: 88760.0 PA, 12.873 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	81156.5	11.770	8525.8	0.511	-2.157
0.046	82460.1	11.959	8478.1	0.504	-1.811
0.080	83593.9	12.124	8426.6	0.497	-1.508
0.115	84863.6	12.308	8388.6	0.491	-1.152
0.146	85858.1	12.452	8348.3	0.486	-0.868
0.178	86607.0	12.561	8292.3	0.477	-0.654
0.213	86998.9	12.618	8288.6	0.476	-0.536
0.244	87120.1	12.635	8261.4	0.478	-0.503
0.276	87168.9	12.642	8240.5	0.470	-0.493
0.308	87244.8	12.658	8227.8	0.468	-0.470
0.368	87322.4	12.665	8212.7	0.466	-0.447
0.442	87864.9	12.671	8205.1	0.465	-0.435
0.490	87444.0	12.682	8227.4	0.468	-0.408
0.553	87517.1	12.693	8258.0	0.473	-0.382
0.618	87619.8	12.708	8304.1	0.479	-0.345
0.688	87744.8	12.726	8380.0	0.490	-0.300
0.765	87930.1	12.753	8480.3	0.505	-0.238
0.838	88179.2	12.789	8601.4	0.522	-0.161
0.916	88508.7	12.836	8754.8	0.544	-0.068
0.987	88909.7	12.895	8908.6	0.567	0.038
FACE					
0.015	91805.2	13.315	8541.0	0.514	0.860
0.057	90873.7	13.180	8478.7	0.505	0.608
0.106	90351.2	13.104	8416.0	0.495	0.466
0.152	90128.4	13.071	8368.0	0.488	0.405
0.201	89923.1	13.042	8318.6	0.481	0.350
0.248	89853.0	13.032	8284.7	0.476	0.338
0.298	89788.7	13.022	8256.5	0.472	0.316
0.398	89650.6	13.002	8238.1	0.469	0.275
0.495	89544.3	12.987	8248.0	0.471	0.241
0.597	89510.8	12.982	8307.0	0.480	0.227
0.660	89508.5	12.982	8361.5	0.488	0.223
0.724	89460.5	12.975	8434.6	0.498	0.204
0.791	89475.1	12.977	8527.8	0.512	0.203
0.856	89421.8	12.969	8637.7	0.528	0.182
0.925	89291.2	12.950	8772.5	0.547	0.141
0.987	89006.9	12.909	8912.0	0.567	0.063

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.02    ADV. RATIO: 0.122

POWER COEFF: 0.093    RECORD NO: 132.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 132.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	89190.0 PA	12.935 PSI
AIR DENSITY:	1.08632 KG/M3	0.067819 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.78 M/S	22.25 FT/S

## PROPFAN:

---

RADIAL STATION:	3	
ROTOR SPEED (RPM):	1206.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.093	
BLADE ANGLE (@ X=41" STA):	15.8 DEG.	
BLADE CHORD:	0.578 M	22.66 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.586	
REL MACH NO. (@ MID CHORD):	0.303	

RUN DATE:	03-11-1987
RUN TIME:	20:25:59

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 182.0

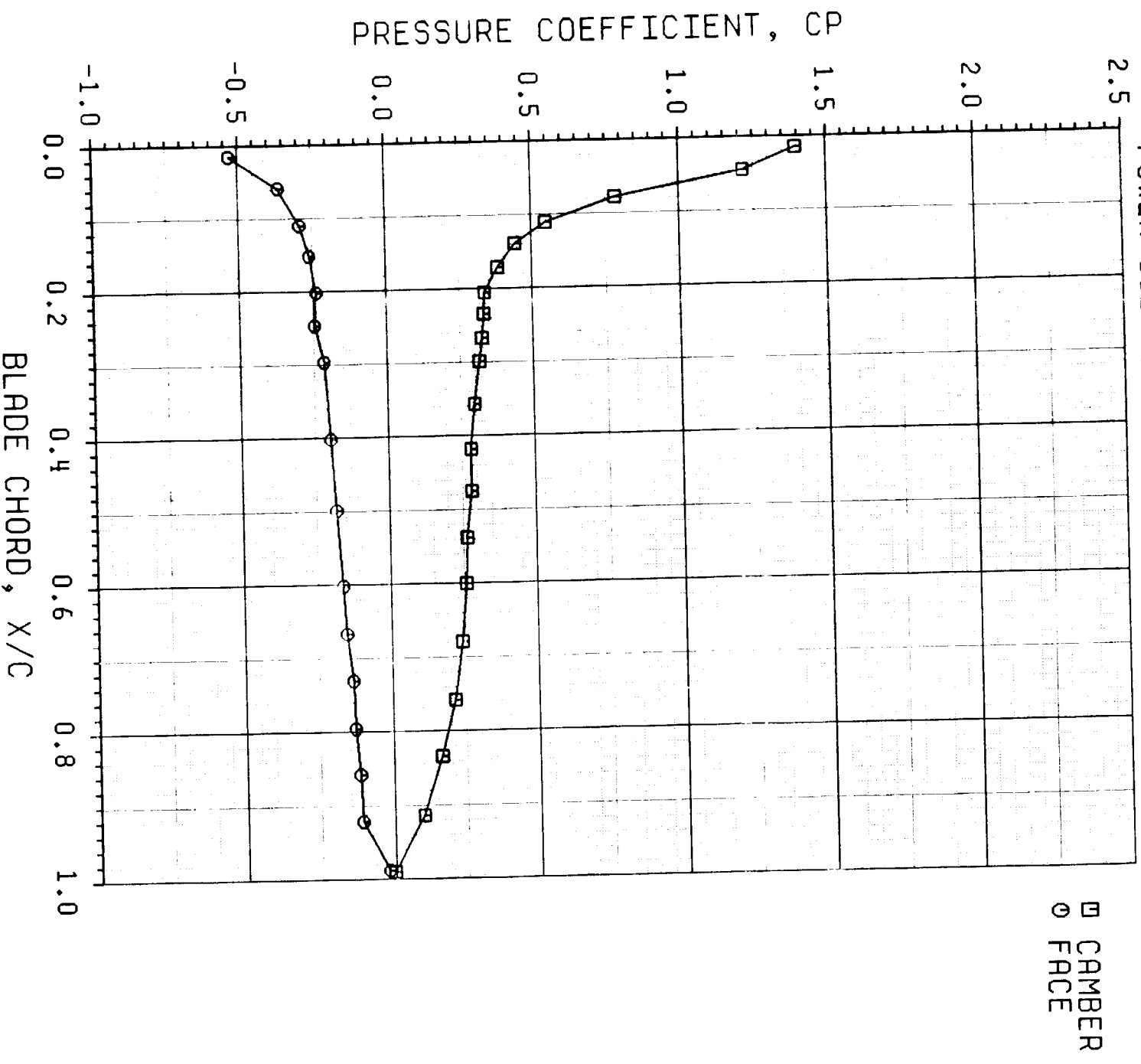
RADIAL STATION: 3

TUNNEL STATIC PRESSURE, PO: 89190.0 PA, 12.935 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	78914.1	11.445	5568.2	0.808	-1.845
0.046	81207.4	11.778	5508.2	0.799	-1.449
0.077	84098.4	12.197	5448.8	0.790	-0.935
0.107	86242.5	12.508	5400.0	0.788	-0.546
0.189	86955.4	12.611	5349.9	0.776	-0.418
0.178	87455.4	12.684	5800.1	0.769	-0.327
0.201	87585.8	12.708	5268.6	0.764	-0.805
0.288	87487.8	12.689	5228.9	0.758	-0.826
0.271	87555.8	12.698	5200.7	0.754	-0.814
0.305	87395.9	12.675	5179.7	0.751	-0.846
0.360	87535.2	12.695	5150.5	0.747	-0.821
0.425	87626.1	12.709	5188.9	0.745	-0.804
0.480	87684.8	12.717	5138.8	0.745	-0.298
0.541	87692.7	12.718	5169.6	0.750	-0.290
0.608	87757.5	12.728	5205.7	0.755	-0.275
0.679	87889.8	12.747	5288.2	0.767	-0.246
0.761	88042.8	12.769	5398.8	0.783	-0.212
0.836	88268.2	12.801	5532.7	0.802	-0.168
0.919	88767.5	12.874	5708.0	0.828	-0.074
0.989	89471.6	12.976	5882.6	0.853	0.048
FACE					
0.013	92961.5	13.482	5579.2	0.809	0.676
0.061	91646.7	13.292	5492.8	0.797	0.447
0.107	91104.9	13.218	5414.0	0.785	0.354
0.151	90854.7	13.177	5348.2	0.776	0.811
0.202	90571.8	13.186	5285.4	0.767	0.261
0.248	90468.1	13.120	5286.8	0.759	0.248
0.294	90506.0	13.126	5199.5	0.754	0.253
0.395	90349.6	13.104	5158.8	0.747	0.225
0.502	90198.9	13.082	5168.2	0.749	0.195
0.597	90186.0	13.080	5208.2	0.755	0.191
0.666	90164.0	13.077	5280.4	0.766	0.184
0.729	90098.9	13.067	5348.6	0.776	0.169
0.788	89988.5	13.051	5440.0	0.789	0.147
0.853	90031.7	13.058	5562.8	0.807	0.151
0.924	89926.6	13.042	5713.8	0.829	0.129
0.988	89545.6	12.987	5875.6	0.852	0.061

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4    MACH NO: 0.03    ADV. RATIO: 0.185  
POWER COEFF: 0.097    RECORD NO: 196.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 196.0

WIND TUNNEL:

STATIC TEMPERATURE:	290.0 K	62.3 F
STATIC PRESSURE:	88720.0 PA	12.867 PSI
AIR DENSITY:	1.06569 KG/M3	0.066531 LBF/FT3
SPEED OF SOUND:	341.40 M/S	1120.12 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.24 M/S	33.60 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1203.0	
ADVANCE RATIO:	0.185	
POWER COEFFICIENT:	0.097	
BLADE ANGLE (@ X=41" STA):	14.7 DEG.	
BLADE CHORD:	0.568 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.679	
REL MACH NO. (@ MID CHORD):	0.348	

RUN DATE:	03-13-1987
RUN TIME:	17:25:33



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 196.0

RADIAL STATION: 4

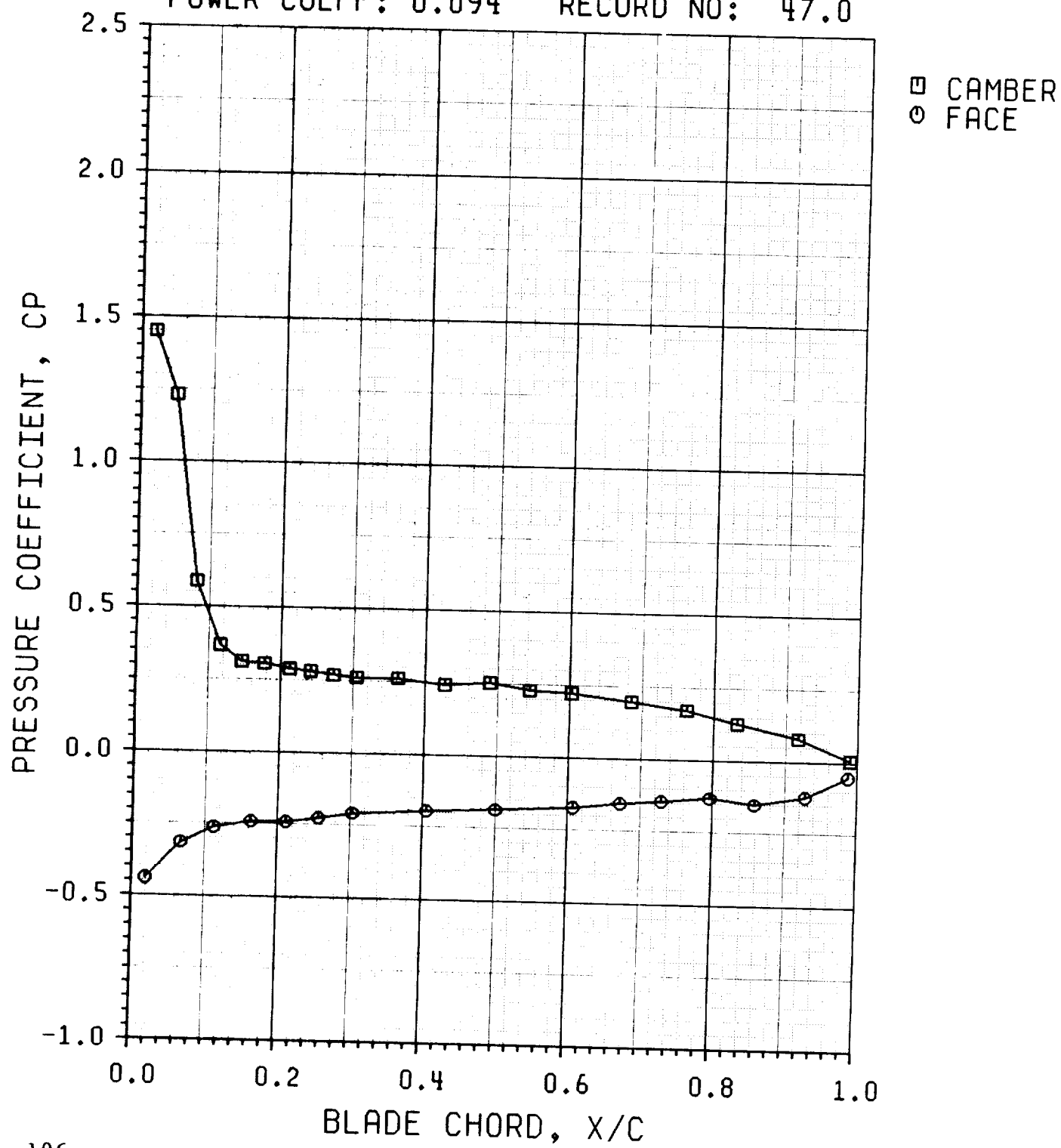
TUNNEL STATIC PRESSURE, P0: 88720.0 PA, 12.867 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	78510.2	11.887	7320.9	1.062	-1.895
0.045	79883.6	11.586	7267.1	1.054	-1.216
0.078	83087.9	12.050	7206.7	1.045	-0.782
0.111	84808.4	12.300	7153.7	1.038	-0.547
0.139	85576.4	12.411	7113.6	1.032	-0.442
0.171	86011.6	12.474	7069.6	1.025	-0.383
0.205	86354.7	12.524	7031.2	1.020	-0.336
0.234	86392.2	12.530	7000.8	1.015	-0.333
0.267	86450.6	12.538	6976.6	1.012	-0.325
0.299	86531.1	12.550	6952.1	1.008	-0.315
0.357	86671.4	12.570	6927.8	1.005	-0.296
0.418	86774.2	12.585	6918.7	1.003	-0.281
0.475	86774.4	12.585	6926.6	1.005	-0.281
0.538	86892.6	12.602	6955.9	1.009	-0.263
0.600	86919.6	12.606	6998.7	1.015	-0.257
0.679	87022.0	12.621	7088.0	1.028	-0.240
0.758	87182.3	12.644	7205.6	1.045	-0.213
0.834	87505.6	12.691	7351.6	1.066	-0.165
0.914	87958.4	12.757	7536.8	1.098	-0.101
0.990	88758.4	12.873	7736.7	1.122	0.005
FACE					
0.015	92617.3	13.433	7836.1	1.064	0.531
0.059	91363.4	13.251	7259.7	1.053	0.364
0.110	90820.1	13.172	7174.6	1.041	0.293
0.152	90579.7	13.137	7114.8	1.032	0.261
0.202	90403.7	13.111	7059.3	1.024	0.239
0.247	90447.8	13.118	7014.8	1.017	0.246
0.297	90225.2	13.086	6979.1	1.012	0.216
0.402	90091.8	13.066	6943.3	1.007	0.198
0.499	89997.2	13.053	6967.6	1.011	0.183
0.602	89871.4	13.034	7034.7	1.020	0.164
0.667	89815.5	13.026	7090.0	1.028	0.155
0.731	89695.1	13.009	7185.1	1.042	0.136
0.796	89678.9	13.006	7297.2	1.058	0.131
0.858	89592.2	12.994	7416.4	1.076	0.118
0.922	89560.4	12.989	7563.2	1.097	0.111
0.988	88901.2	12.894	7786.7	1.122	0.023

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5    MACH NO: 0.02    ADV. RATIO: 0.122

POWER COEFF: 0.094    RECORD NO: 47.0



# LAP/SR7 BLADE -- STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 47.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	89280.0 PA	12.949 PSI
AIR DENSITY:	1.08741 KG/M3	0.067887 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.78 M/S	22.25 FT/S

## PROPFAN:

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RADIAL STATION:	5	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.094	
BLADE ANGLE (@ X=41" STA):	15.7 DEG.	
BLADE CHORD:	0.531 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.745	
REL MACH NO. (@ MID CHORD):	0.383	

RUN DATE:	03-06-1987
RUN TIME:	16:29:23

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 47.0

RADIAL STATION: 5

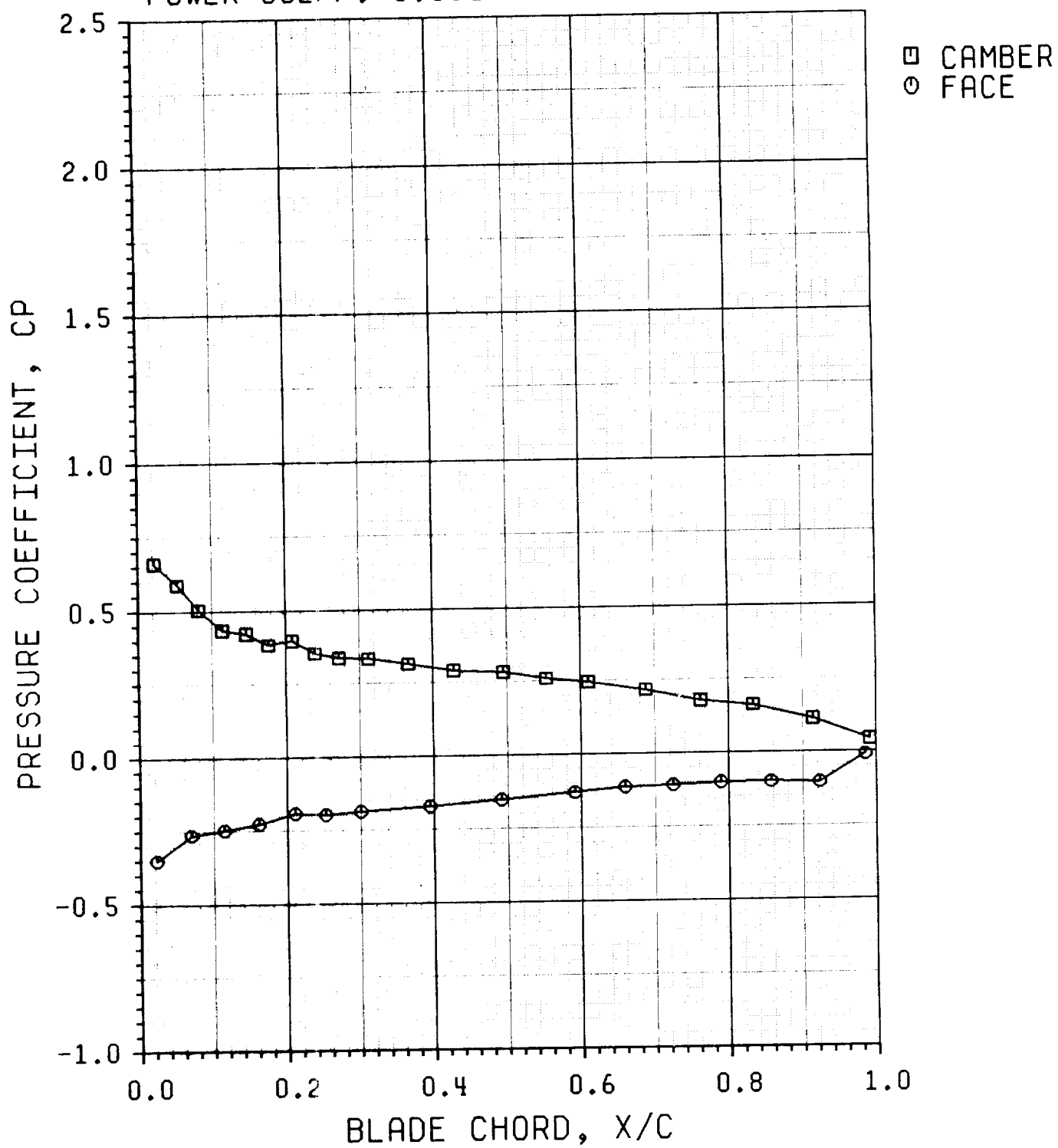
TUNNEL STATIC PRESSURE, P0: 89280.0 PA, 12.949 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	76886.0	11.078	8896.9	1.290	-1.449
0.050	78398.2	11.870	8847.0	1.288	-1.230
0.082	84127.7	12.201	8796.6	1.276	-0.586
0.116	86085.9	12.485	8752.7	1.269	-0.365
0.146	86574.7	12.556	8715.8	1.264	-0.810
0.177	86642.2	12.566	8688.5	1.259	-0.804
0.212	86794.7	12.588	8652.9	1.255	-0.287
0.241	86864.7	12.598	8631.1	1.252	-0.280
0.278	86959.4	12.612	8611.4	1.249	-0.269
0.306	87035.5	12.628	8596.1	1.247	-0.261
0.362	87038.4	12.628	8583.5	1.245	-0.261
0.427	87200.7	12.647	8586.5	1.245	-0.242
0.489	87100.9	12.632	8600.9	1.247	-0.253
0.544	87307.2	12.662	8633.3	1.252	-0.229
0.602	87352.4	12.669	8687.4	1.260	-0.222
0.685	87550.6	12.698	8781.0	1.274	-0.197
0.762	87755.6	12.727	8896.7	1.290	-0.171
0.832	88125.4	12.781	9024.7	1.309	-0.128
0.917	88555.0	12.848	9211.9	1.336	-0.079
0.990	89234.4	12.942	9894.8	1.363	-0.005
FACE					
0.019	93220.1	13.520	8908.1	1.292	0.442
0.067	92097.0	13.857	8831.0	1.281	0.819
0.112	91602.6	13.285	8764.5	1.271	0.265
0.163	91398.8	13.255	8709.1	1.263	0.243
0.211	91376.4	13.253	8669.8	1.257	0.242
0.256	91239.8	13.233	8639.8	1.253	0.227
0.303	91077.7	13.209	8615.3	1.249	0.209
0.405	90956.8	13.192	8593.6	1.246	0.195
0.500	90883.0	13.181	8618.0	1.250	0.186
0.607	90780.8	13.166	8704.1	1.262	0.172
0.672	90636.9	13.145	8771.9	1.272	0.155
0.729	90562.0	13.134	8855.7	1.284	0.145
0.796	90450.6	13.118	8963.6	1.300	0.131
0.858	90651.9	13.147	9079.4	1.317	0.151
0.928	90406.0	13.112	9286.1	1.340	0.122
0.987	89776.8	13.021	9385.9	1.361	0.053

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6    MACH NO: 0.03    ADV. RATIO: 0.183

POWER COEFF: 0.092    RECORD NO: 183.0



**LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST**

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**OPERATING PARAMETERS FOR RECORD NUMBER: 183.0**

**WIND TUNNEL:**

STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	88890.0 PA	12.892 PSI
AIR DENSITY:	1.08266 KG/M3	0.067591 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.17 M/S	33.37 FT/S

**PROPFAN:**

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1206.0	
ADVANCE RATIO:	0.183	
POWER COEFFICIENT:	0.092	
BLADE ANGLE (@ X=41" STA):	14.5 DEG.	
BLADE CHORD:	0.468 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.808	
REL MACH NO. (@ MID CHORD):	0.418	

RUN DATE:	03-13-1987
RUN TIME:	13:31:29

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

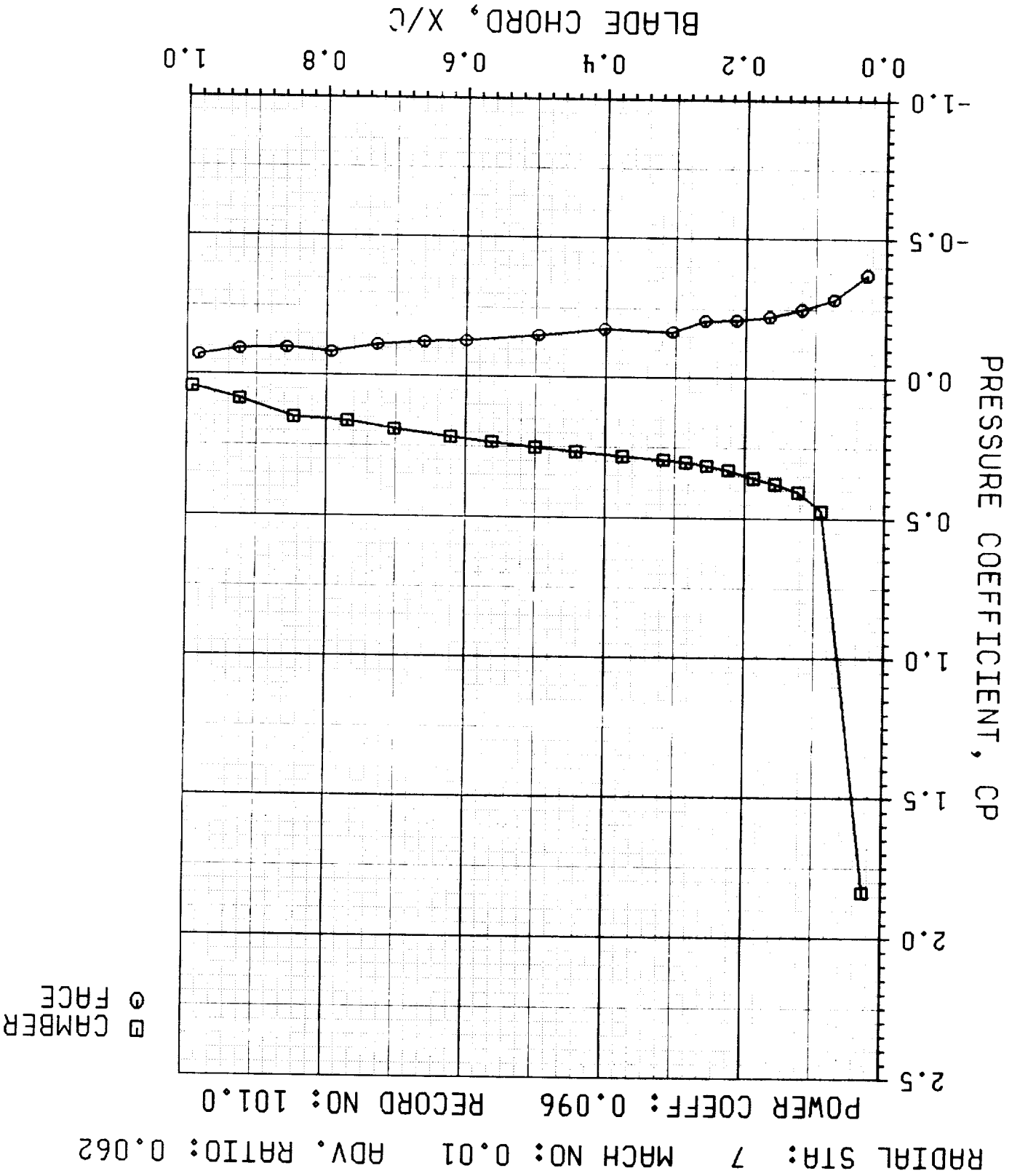
RECORD NUMBER: 183.0

RADIAL STATION: 6

TUNNEL STATIC PRESSURE, PO: 88890.0 PA, 12.892 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	81945.9	11.885	10528.7	1.527	-0.660
0.053	82708.1	11.995	10497.5	1.522	-0.589
0.082	83614.2	12.127	10471.4	1.519	-0.504
0.114	84341.1	12.232	10458.4	1.516	-0.435
0.146	84477.2	12.252	10438.5	1.513	-0.428
0.176	84894.1	12.312	10407.5	1.509	-0.384
0.208	84749.7	12.291	10394.0	1.507	-0.398
0.239	85208.6	12.858	10387.9	1.507	-0.354
0.272	85377.9	12.883	10378.8	1.505	-0.338
0.312	85422.7	12.889	10377.2	1.505	-0.334
0.366	85629.7	12.419	10383.1	1.506	-0.314
0.428	85874.2	12.455	10403.6	1.509	-0.290
0.495	85940.6	12.464	10432.2	1.513	-0.283
0.553	86180.6	12.499	10471.9	1.519	-0.259
0.610	86308.7	12.518	10524.1	1.526	-0.245
0.688	86593.9	12.559	10617.9	1.540	-0.216
0.762	86981.8	12.615	10728.7	1.556	-0.178
0.838	87141.2	12.638	10851.6	1.574	-0.161
0.914	87661.9	12.714	11008.8	1.597	-0.112
0.991	88423.7	12.824	11179.0	1.621	-0.042
FACE					
0.022	92577.6	13.427	10532.9	1.528	0.350
0.069	91654.2	13.293	10487.6	1.521	0.264
0.114	91477.9	13.267	10451.9	1.516	0.248
0.161	91266.1	13.237	10419.2	1.511	0.228
0.210	90890.6	13.182	10400.5	1.508	0.192
0.252	90938.1	13.189	10386.4	1.506	0.197
0.300	90825.4	13.173	10374.6	1.505	0.187
0.394	90676.5	13.151	10388.1	1.507	0.172
0.491	90476.7	13.122	10427.6	1.512	0.152
0.591	90267.3	13.092	10511.4	1.524	0.131
0.659	90104.1	13.068	10580.0	1.534	0.115
0.724	90061.1	13.062	10667.8	1.547	0.110
0.789	89987.1	13.051	10763.6	1.561	0.102
0.857	89992.1	13.052	10891.6	1.580	0.101
0.923	90033.6	13.058	11024.9	1.599	0.104
0.985	89010.1	12.909	11163.6	1.619	0.011

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.





LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 101.0

WIND TUNNEL:

STATIC TEMPERATURE:	294.0 K	69.5 F
STATIC PRESSURE:	88990.0 PA	12.906 PSI
AIR DENSITY:	1.05489 KG/M3	0.065825 LBF/FT3
SPEED OF SOUND:	343.74 M/S	1127.82 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.44 M/S	11.28 FT/S

PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1207.0	
ADVANCE RATIO:	0.062	
POWER COEFFICIENT:	0.096	
BLADE ANGLE (@ X=41" STA):	16.0 DEG.	
BLADE CHORD:	0.397 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.884 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.860	
REL MACH NO. (@ MID CHORD):	0.488	

RUN DATE:	03-10-1987
RUN TIME:	18:10:25

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 101.0

RADIAL STATION: 7

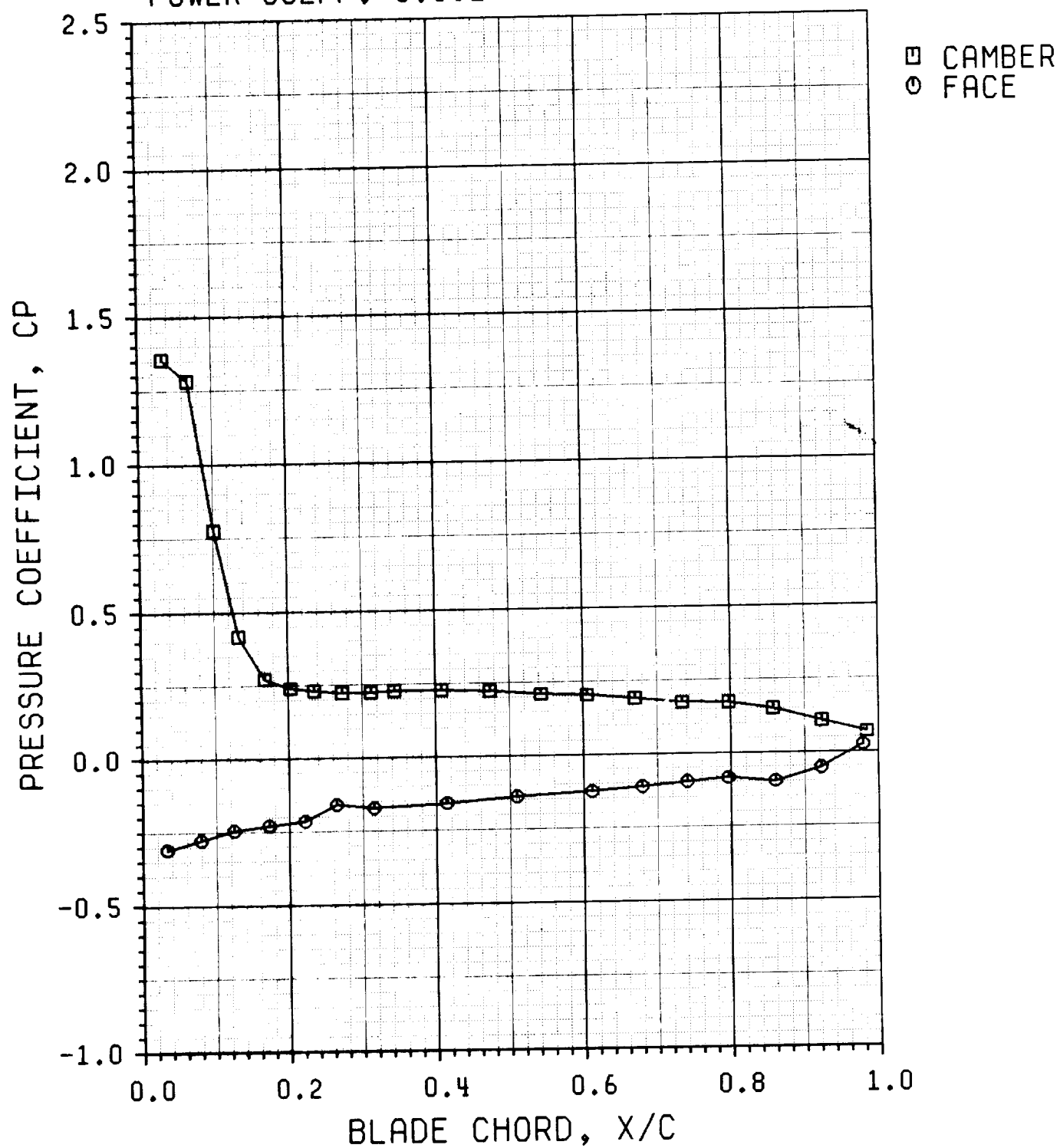
TUNNEL STATIC PRESSURE, PO: 88990.0 PA, 12.906 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	67699.6	9.819	11598.8	1.682	-1.836
0.061	*****	*****	11589.2	1.681	*****
0.090	83535.5	12.115	11588.4	1.680	-0.471
0.128	84804.4	12.227	11574.4	1.679	-0.405
0.156	84619.0	12.278	11566.7	1.678	-0.378
0.187	84846.6	12.806	11558.2	1.676	-0.358
0.223	85181.4	12.854	11568.7	1.677	-0.329
0.254	85861.2	12.880	11571.1	1.678	-0.314
0.284	85488.8	12.899	11572.5	1.678	-0.303
0.316	85589.7	12.413	11580.0	1.679	-0.294
0.375	85716.0	12.482	11596.9	1.682	-0.282
0.442	85880.1	12.455	11628.7	1.687	-0.267
0.500	86039.5	12.479	11671.6	1.693	-0.253
0.562	86246.1	12.508	11722.6	1.700	-0.234
0.621	86430.5	12.535	11774.8	1.708	-0.217
0.702	86724.5	12.578	11874.6	1.722	-0.191
0.769	87042.2	12.624	11957.9	1.734	-0.163
0.846	87176.2	12.643	12070.6	1.751	-0.150
0.924	87937.7	12.754	12202.0	1.770	-0.086
0.992	88464.2	12.830	12826.0	1.788	-0.048
FACE					
0.027	93299.2	18.531	11598.1	1.681	0.872
0.074	92299.2	18.386	11588.1	1.680	0.286
0.120	91877.7	18.325	11562.9	1.677	0.250
0.166	91574.8	18.281	11566.0	1.677	0.223
0.218	91411.7	18.258	11552.5	1.675	0.210
0.258	91897.4	18.256	11561.4	1.677	0.208
0.305	90912.7	18.185	11571.2	1.678	0.166
0.402	91020.7	18.201	11607.7	1.683	0.175
0.497	90758.8	18.162	11669.5	1.692	0.151
0.600	90506.8	18.126	11751.3	1.704	0.129
0.660	90450.6	18.118	11812.1	1.713	0.124
0.727	90840.0	18.102	11897.0	1.725	0.113
0.793	89998.9	18.052	11991.8	1.789	0.084
0.857	90182.4	18.079	12091.8	1.754	0.099
0.925	90182.8	18.072	12206.7	1.770	0.094
0.983	89865.4	18.088	12817.9	1.786	0.071

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.02    ADV. RATIO: 0.122

POWER COEFF: 0.092    RECORD NO: 169.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 169.0

WIND TUNNEL:

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STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	89290.0 PA	12.350 PSI
AIR DENSITY:	1.08753 KG/M3	0.067395 LBF/FT3
SPEED OF SOUND:	839.03 M/S	1112.87 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.78 M/S	22.25 FT/S

PROPFAN:

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RADIAL STATION:	8	
ROTOR SPEED (RPM):	1206.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.092	
BLADE ANGLE (@ X=41" STA):	14.4 DEG.	
BLADE CHORD:	0.326 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.903	
REL MACH NO. (@ MID CHORD):	0.466	

RUN DATE:	03-12-1987
RUN TIME:	20:00:55

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 169.0

RADIAL STATION: 8

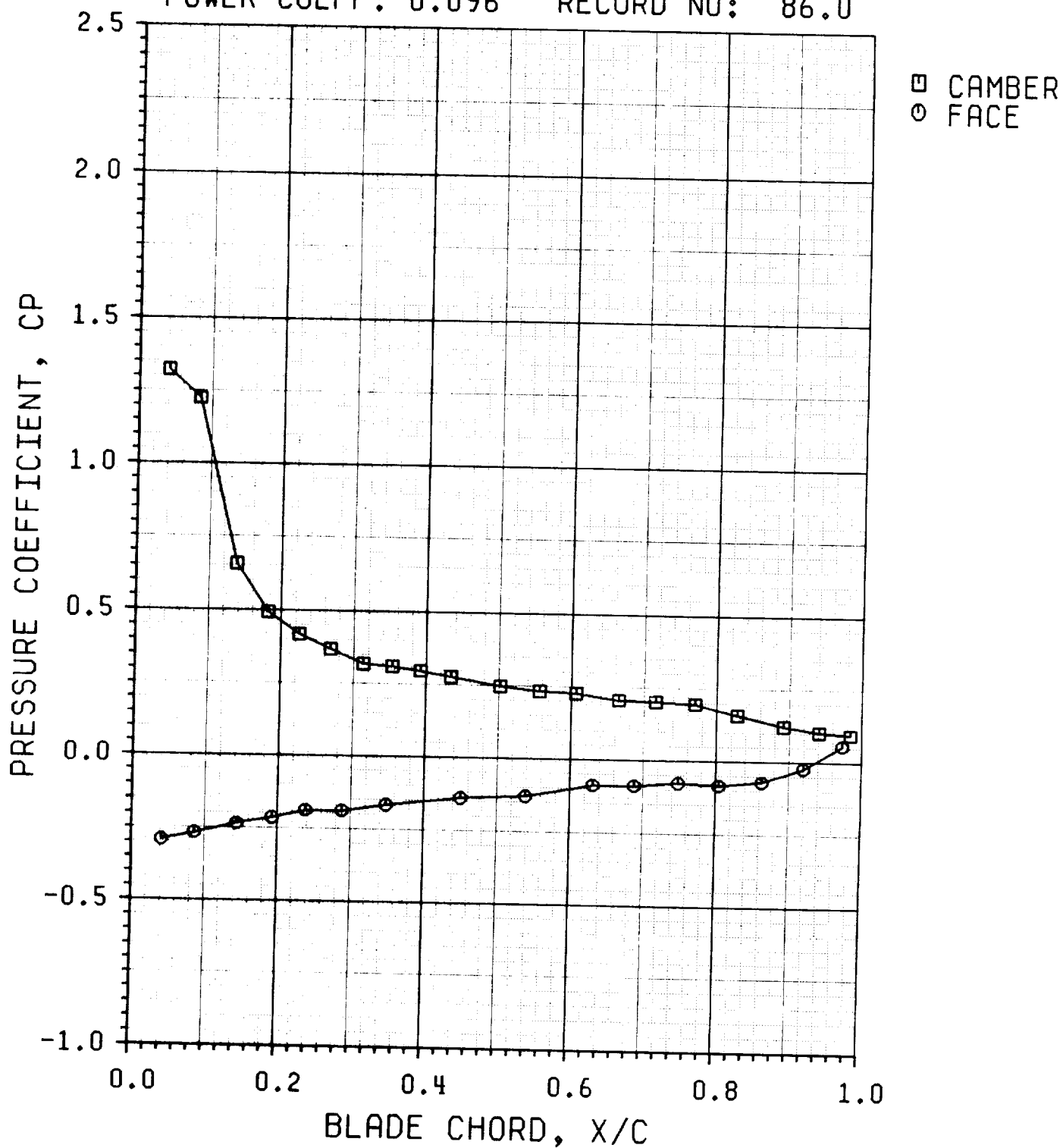
TUNNEL STATIC PRESSURE, PO: 89290.0 PA, 12.950 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.038	71878.5	10.851	18224.7	1.918	-1.855
0.067	72840.8	10.492	18224.2	1.918	-1.282
0.101	79046.6	11.464	18224.1	1.918	-0.775
0.183	83757.8	12.148	18227.8	1.918	-0.418
0.168	85696.7	12.429	18240.8	1.920	-0.271
0.208	86130.5	12.492	18242.4	1.921	-0.289
0.285	86238.9	12.507	18247.1	1.921	-0.230
0.278	86336.8	12.522	18265.6	1.924	-0.223
0.312	86846.1	12.528	18288.5	1.927	-0.222
0.844	86255.2	12.510	18297.0	1.929	-0.228
0.408	86265.9	12.511	18833.0	1.934	-0.227
0.474	86321.4	12.519	18873.8	1.940	-0.222
0.548	86480.9	12.548	18422.9	1.947	-0.209
0.605	86540.2	12.551	18484.0	1.956	-0.204
0.670	86722.1	12.578	18547.5	1.965	-0.190
0.784	86916.2	12.606	18615.1	1.975	-0.174
0.797	86917.7	12.606	18699.2	1.987	-0.173
0.857	87225.9	12.651	18767.9	1.997	-0.150
0.923	87787.1	12.782	18872.4	2.012	-0.108
0.984	88821.2	12.809	18956.7	2.024	-0.069
FACE					
0.038	98379.4	18.543	18216.9	1.917	0.309
0.079	92955.7	18.482	18216.9	1.917	0.277
0.124	92525.6	18.419	18226.0	1.918	0.245
0.172	92319.5	18.389	18227.7	1.918	0.229
0.221	92183.1	18.362	18238.0	1.919	0.215
0.264	91415.1	18.258	18250.1	1.922	0.160
0.315	91588.0	18.283	18270.6	1.925	0.173
0.414	91403.6	18.257	18824.8	1.938	0.159
0.509	91165.9	18.222	18889.9	1.942	0.140
0.611	90986.8	18.196	18481.3	1.955	0.126
0.679	90820.7	18.172	18546.7	1.965	0.113
0.740	90607.4	18.141	18613.2	1.974	0.097
0.796	90459.9	18.120	18681.6	1.984	0.086
0.860	90657.7	18.148	18765.6	1.996	0.099
0.922	90051.1	18.060	18865.9	2.011	0.055
0.979	88954.1	12.901	18952.8	2.024	-0.024

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.02 ADV. RATIO: 0.123

POWER COEFF: 0.096 RECORD NO: 86.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 86.0

WIND TUNNEL:

STATIC TEMPERATURE:	290.0 K	62.8 F
STATIC PRESSURE:	88930.0 PA	12.898 PSI
AIR DENSITY:	1.06821 KG/M3	0.066688 LBF/FT3
SPEED OF SOUND:	341.40 M/S	1120.12 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.83 M/S	22.40 FT/S

PROPFAN:

RADIAL STATION:	9	
ROTOR SPEED (RPM):	1203.0	
ADVANCE RATIO:	0.123	
POWER COEFFICIENT:	0.096	
BLADE ANGLE (@ X=41" STA):	16.0 DEG.	
BLADE CHORD:	0.259 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.938	
REL MACH NO. (@ MID CHORD):	0.479	

RUN DATE:	03-10-1987
RUN TIME:	14:29:40

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 86.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 88930.0 PA, 12.898 PSI

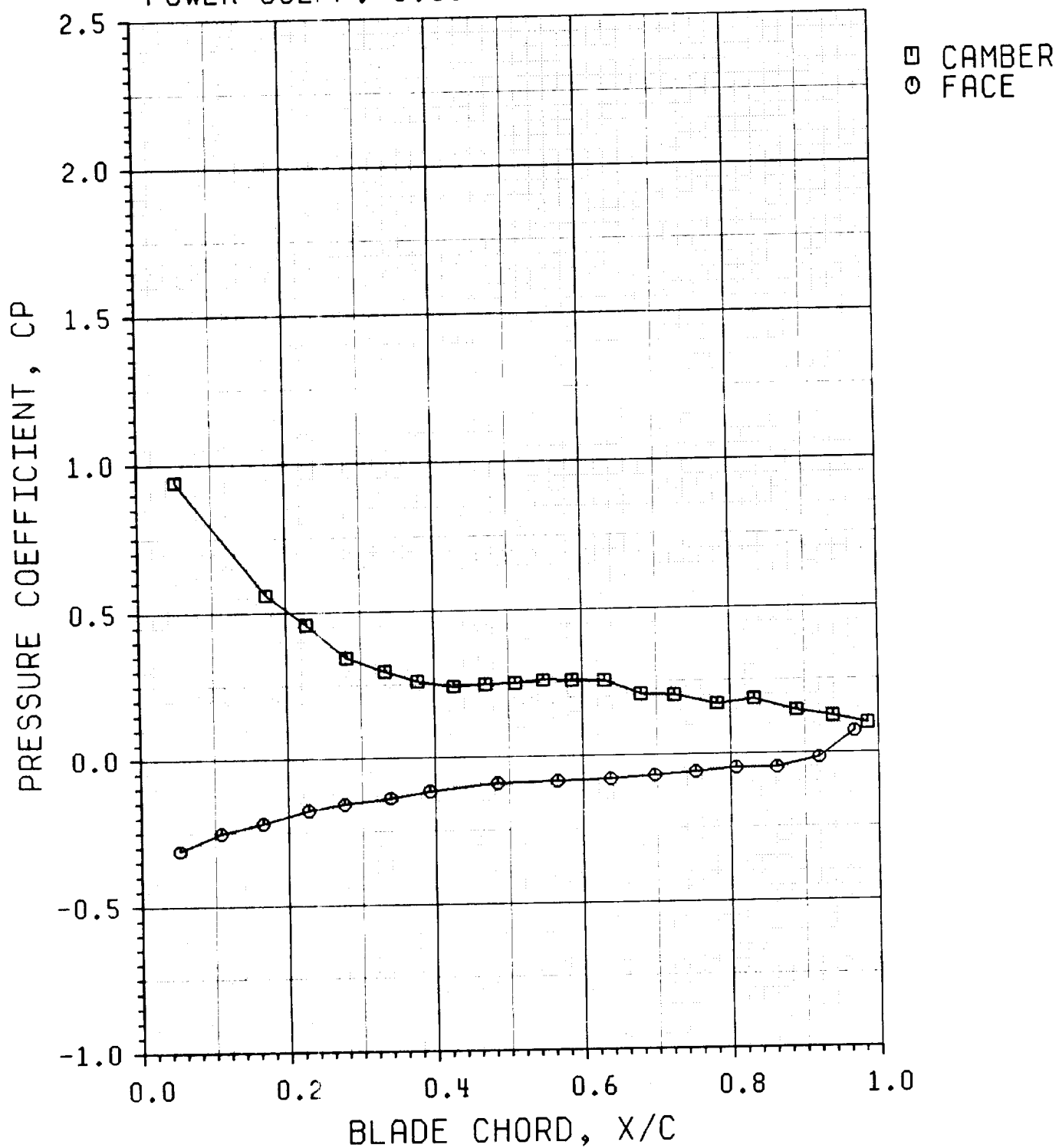
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	70431.5	10.215	14016.8	2.038	-1.820
0.084	71757.6	10.407	14080.1	2.035	-1.224
0.138	79727.2	11.568	14048.1	2.037	-0.655
0.182	82020.6	11.896	14052.8	2.038	-0.492
0.225	83063.9	12.047	14072.1	2.041	-0.417
0.268	83765.1	12.149	14079.2	2.042	-0.367
0.313	84447.5	12.248	14100.5	2.045	-0.318
0.353	84560.2	12.264	14117.1	2.047	-0.310
0.392	84742.7	12.290	14139.1	2.051	-0.296
0.434	84987.5	12.326	14158.4	2.053	-0.278
0.502	85422.2	12.389	14198.7	2.059	-0.247
0.556	85611.1	12.416	14235.8	2.065	-0.233
0.606	85675.5	12.426	14277.0	2.071	-0.228
0.665	85986.0	12.471	14313.5	2.076	-0.206
0.716	86035.9	12.478	14356.7	2.082	-0.202
0.770	86108.6	12.489	14398.3	2.088	-0.196
0.828	86610.7	12.561	14456.2	2.097	-0.160
0.892	87156.8	12.641	14516.5	2.105	-0.122
0.941	87431.0	12.680	14564.8	2.112	-0.103
0.984	87560.4	12.699	14605.5	2.118	-0.094
FACE					
0.041	93025.5	18.492	14015.4	2.033	0.292
0.086	92698.8	18.444	14027.1	2.034	0.269
0.144	92240.9	18.378	14037.0	2.036	0.236
0.192	91956.6	18.337	14050.9	2.038	0.215
0.238	91592.3	18.284	14065.6	2.040	0.189
0.288	91587.7	18.283	14084.7	2.043	0.189
0.348	91285.1	18.239	14112.4	2.047	0.167
0.450	90914.1	18.186	14160.4	2.054	0.140
0.539	90785.1	18.167	14224.1	2.063	0.130
0.631	90197.4	18.082	14282.7	2.071	0.089
0.688	90204.7	18.083	14329.7	2.078	0.089
0.748	90040.9	18.059	14376.0	2.085	0.077
0.804	90139.1	18.073	14432.9	2.093	0.084
0.863	89957.6	18.047	14485.9	2.101	0.071
0.920	89284.8	12.949	14542.6	2.109	0.024
0.973	88105.5	12.778	14598.1	2.117	-0.056

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10    MACH NO: 0.03    ADV. RATIO: 0.185

POWER COEFF: 0.097    RECORD NO: 147.0



**LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST**

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**OPERATING PARAMETERS FOR RECORD NUMBER: 147.0**

**WIND TUNNEL:**

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STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	89170.0 PA	12.933 PSI
AIR DENSITY:	1.07853 KG/M3	0.067383 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.08	
INFLOW VELOCITY:	10.21 M/S	33.49 FT/S

**PROPFAN:**

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RADIAL STATION:	10	
ROTOR SPEED (RPM):	1195.0	
ADVANCE RATIO:	0.185	
POWER COEFFICIENT:	0.097	
BLADE ANGLE (@ X=41" STA):	14.6 DEG.	
BLADE CHORD:	0.206 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.50 IN.
RADIUS RATIO (@ MID CHORD):	0.964	
REL MACH NO. (@ MID CHORD):	0.492	

RUN DATE:	08-12-1987
RUN TIME:	13:40:39

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 147.0

RADIAL STATION: 10

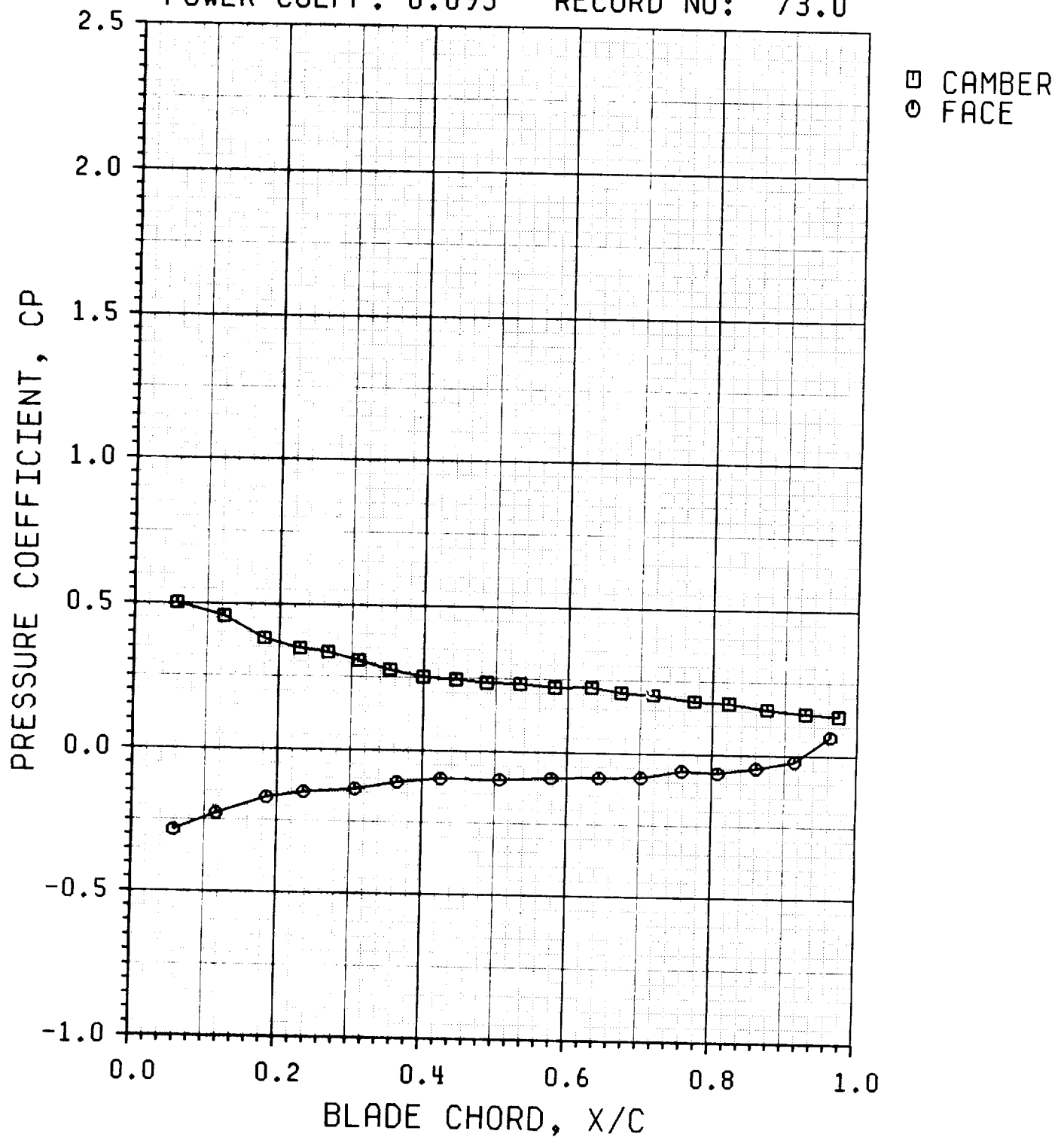
TUNNEL STATIC PRESSURE, PO: 89170.0 PA, 12.938 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	75186.1	10.904	14868.1	2.156	-0.941
0.113	*****	*****	14888.0	2.159	*****
0.173	80840.9	11.725	14900.6	2.161	-0.559
0.227	82852.9	11.944	14915.2	2.163	-0.457
0.281	84067.1	12.191	14984.4	2.166	-0.842
0.333	84759.8	12.293	14961.9	2.170	-0.295
0.377	85281.3	12.369	14970.9	2.171	-0.260
0.426	85549.4	12.407	14995.4	2.175	-0.241
0.469	85460.8	12.395	15021.5	2.179	-0.247
0.509	85417.1	12.388	15036.0	2.181	-0.250
0.547	85273.6	12.867	15056.6	2.184	-0.259
0.586	85298.9	12.871	15083.0	2.188	-0.257
0.630	85314.2	12.873	15099.1	2.190	-0.255
0.679	86030.8	12.477	15181.2	2.195	-0.207
0.724	86100.4	12.487	15161.1	2.199	-0.202
0.782	86567.8	12.555	15196.6	2.204	-0.171
0.832	86333.9	12.521	15233.4	2.209	-0.186
0.889	86946.1	12.610	15274.5	2.215	-0.146
0.938	87257.8	12.655	15317.1	2.221	-0.125
0.985	87633.6	12.710	15350.0	2.226	-0.100
FACE					
0.052	93791.7	13.603	14856.0	2.155	0.811
0.108	92936.6	13.479	14871.3	2.157	0.253
0.165	92442.4	13.407	14889.3	2.159	0.220
0.227	91801.1	13.814	14907.1	2.162	0.177
0.276	91521.8	13.274	14920.6	2.164	0.158
0.339	91242.7	13.233	14942.5	2.167	0.139
0.392	90915.2	13.186	14964.8	2.170	0.117
0.484	90546.9	13.132	15011.5	2.177	0.092
0.565	90492.8	13.124	15054.6	2.183	0.088
0.637	90424.2	13.114	15091.4	2.189	0.088
0.697	90258.9	13.090	15129.7	2.194	0.072
0.752	90131.6	13.072	15173.4	2.201	0.063
0.807	89927.1	13.042	15205.6	2.205	0.050
0.862	89930.7	13.048	15249.7	2.212	0.050
0.919	89480.1	12.970	15296.7	2.219	0.017
0.967	88048.7	12.770	15331.0	2.228	-0.073

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11    MACH NO: 0.02    ADV. RATIO: 0.121

POWER COEFF: 0.093    RECORD NO: 73.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 78.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	285.0 K	53.3 F
STATIC PRESSURE:	88850.0 PA	12.886 PSI
AIR DENSITY:	1.08597 KG/M3	0.067797 LBF/FT3
SPEED OF SOUND:	388.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.77 M/S	22.21 FT/S

## PROPFAN:

---

RADIAL STATION:	11	
ROTOR SPEED (RPM):	1208.0	
ADVANCE RATIO:	0.121	
POWER COEFFICIENT:	0.093	
BLADE ANGLE (@ X=41" STA):	15.5 DEG.	
BLADE CHORD:	0.186 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.505	

RUN DATE:	03-09-1987
RUN TIME:	20:52:08

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 78.0

RADIAL STATION: 11

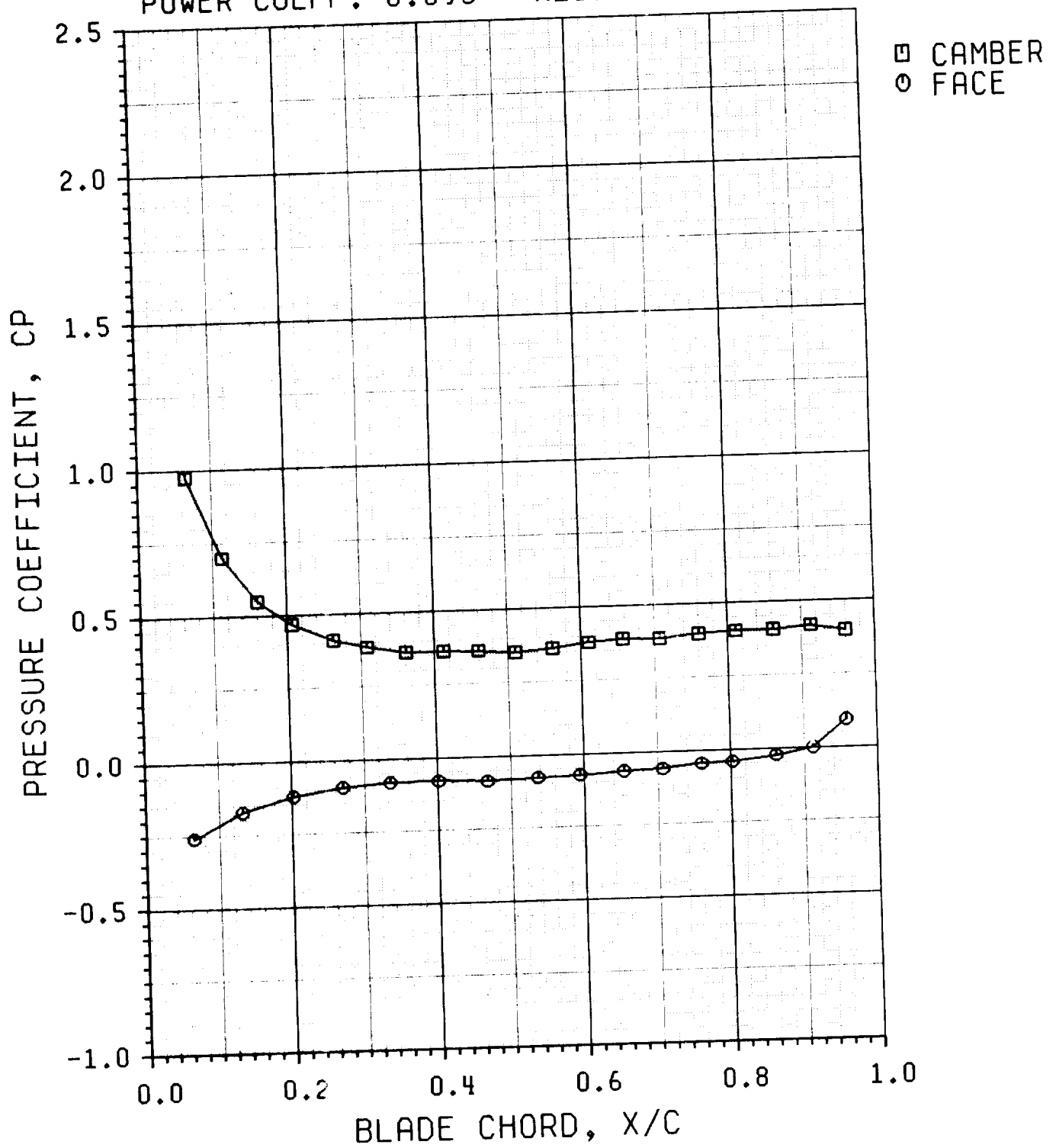
TUNNEL STATIC PRESSURE, P0: 88850.0 PA, 12.886 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	81019.4	11.750	15626.4	2.266	-0.501
0.128	81686.9	11.847	15655.2	2.271	-0.458
0.179	82875.1	12.020	15677.5	2.274	-0.381
0.228	83892.9	12.095	15694.6	2.276	-0.348
0.267	83589.0	12.128	15710.9	2.279	-0.335
0.309	84024.9	12.186	15719.5	2.280	-0.307
0.358	84502.4	12.256	15737.1	2.282	-0.276
0.399	84866.4	12.308	15756.3	2.285	-0.253
0.444	84976.9	12.324	15777.2	2.288	-0.245
0.487	85130.9	12.347	15800.6	2.292	-0.235
0.538	85164.6	12.352	15827.0	2.295	-0.233
0.581	85320.6	12.374	15852.2	2.299	-0.228
0.632	85288.1	12.370	15878.6	2.303	-0.224
0.678	85534.3	12.405	15908.1	2.306	-0.208
0.717	85650.7	12.422	15921.3	2.309	-0.201
0.774	85968.8	12.468	15959.7	2.315	-0.181
0.822	86044.7	12.479	15987.6	2.319	-0.175
0.875	86356.7	12.525	16019.9	2.323	-0.156
0.928	86553.5	12.553	16069.4	2.331	-0.143
0.974	86671.9	12.570	16097.5	2.335	-0.135
FACE					
0.058	93320.9	13.535	15624.8	2.266	0.286
0.116	92412.5	13.403	15644.4	2.269	0.228
0.185	91516.4	13.273	15660.3	2.271	0.170
0.236	91195.6	13.226	15684.2	2.275	0.150
0.307	90997.4	13.198	15707.5	2.278	0.137
0.365	90626.0	13.144	15730.4	2.281	0.113
0.425	90889.6	13.109	15756.9	2.285	0.098
0.507	90414.3	13.113	15789.2	2.290	0.099
0.578	90291.8	13.095	15830.7	2.296	0.091
0.644	90228.0	13.085	15868.4	2.301	0.087
0.702	90203.2	13.082	15897.7	2.306	0.085
0.758	89805.1	13.025	15936.0	2.311	0.060
0.808	89896.4	13.038	15969.3	2.316	0.066
0.861	89603.7	12.996	16003.0	2.321	0.047
0.914	89224.3	12.940	16039.4	2.326	0.023
0.963	87814.7	12.736	16075.2	2.331	-0.064

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.03    ADV. RATIO: 0.184

POWER COEFF: 0.095    RECORD NO: 118.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 118.0

WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	88900.0 PA	12.898 PSI
AIR DENSITY:	1.07901 KG/M3	0.067368 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.82 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.19 M/S	33.43 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1202.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.095	
BLADE ANGLE (@ X=41" STA):	16.0 DEG.	
BLADE CHORD:	0.165 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.507	

RUN DATE:	03-11-1987
RUN TIME:	16:43:18



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 118.0

RADIAL STATION: 12

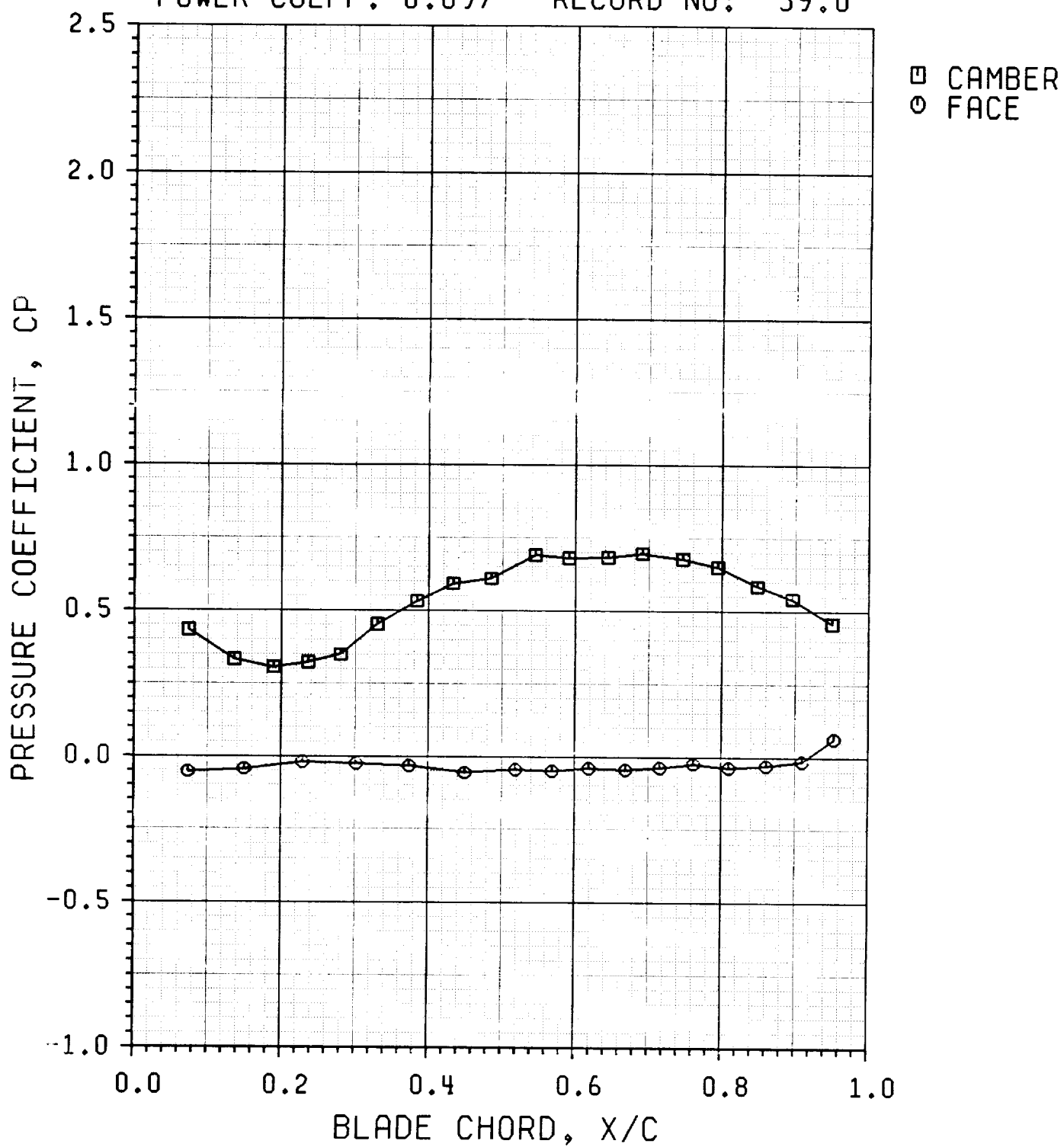
TUNNEL STATIC PRESSURE, PO: 88900.0 PA, 12.893 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	78523.9	10.663	15782.9	2.289	-0.974
0.113	77845.7	11.290	15803.8	2.292	-0.699
0.160	80231.5	11.636	15820.2	2.294	-0.548
0.206	81485.8	11.818	15832.4	2.296	-0.468
0.262	82400.3	11.951	15850.7	2.299	-0.410
0.308	82818.9	12.011	15861.5	2.300	-0.384
0.361	83143.9	12.059	15888.6	2.304	-0.362
0.412	83189.8	12.058	15901.8	2.306	-0.362
0.460	83161.4	12.061	15916.0	2.308	-0.361
0.510	83294.4	12.080	15943.7	2.312	-0.352
0.561	83106.1	12.053	15971.5	2.316	-0.363
0.610	82836.4	12.014	16000.7	2.321	-0.379
0.657	82694.9	11.993	16017.0	2.323	-0.387
0.707	82726.2	11.998	16041.9	2.327	-0.385
0.760	82526.1	11.969	16066.4	2.330	-0.397
0.811	82402.9	11.951	16093.7	2.334	-0.404
0.862	82370.9	11.946	16121.6	2.338	-0.405
0.913	82179.2	11.919	16155.6	2.343	-0.416
0.960	82461.1	11.960	16183.1	2.347	-0.398
FACE					
0.065	92990.2	13.487	15778.9	2.288	0.259
0.132	91632.1	13.290	15802.6	2.292	0.178
0.202	90826.6	13.173	15819.7	2.294	0.122
0.270	90397.6	13.111	15843.2	2.298	0.095
0.335	90213.9	13.034	15865.1	2.301	0.083
0.401	90180.1	13.079	15888.6	2.304	0.081
0.468	90264.9	13.091	15915.2	2.308	0.086
0.537	90159.4	13.076	15941.2	2.312	0.079
0.594	90077.0	13.064	15978.8	2.317	0.074
0.654	89946.8	13.045	16000.0	2.321	0.065
0.707	89872.7	13.034	16032.8	2.325	0.061
0.760	89642.0	13.001	16057.7	2.329	0.046
0.802	89569.8	12.990	16075.7	2.332	0.042
0.862	89294.2	12.951	16114.2	2.337	0.024
0.912	88896.8	12.898	16188.0	2.341	0.000
0.958	87415.5	12.678	16169.3	2.345	-0.092

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13    MACH NO: 0.01    ADV. RATIO: 0.061

POWER COEFF: 0.097    RECORD NO: 59.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 59.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	88620.0 PA	12.853 PSI
AIR DENSITY:	1.07937 KG/M3	0.067385 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.01	
INFLOW VELOCITY:	3.39 M/S	11.12 FT/S

## PROPFAN:

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RADIAL STATION:	18	
ROTOR SPEED (RPM):	1198.0	
ADVANCE RATIO:	0.061	
POWER COEFFICIENT:	0.097	
BLADE ANGLE (@ X=41" STA):	15.3 DEG.	
BLADE CHORD:	0.146 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.384 M	54.49 IN.
RADIUS RATIO (@ MID CHORD):	0.996	
REL MACH NO. (@ MID CHORD):	0.510	

RUN DATE:	03-09-1987
RUN TIME:	16:03:12

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 59.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 88620.0 PA, 12.853 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	81687.9	11.847	16002.6	2.821	-0.483
0.186	83292.8	12.080	16022.5	2.824	-0.888
0.189	88728.1	12.148	16028.7	2.824	-0.806
0.286	88449.7	12.108	16040.6	2.826	-0.822
0.280	83018.4	12.040	16056.4	2.829	-0.849
0.330	81847.9	11.798	16064.2	2.880	-0.458
0.384	80077.2	11.614	16084.8	2.838	-0.581
0.483	79109.5	11.473	16102.7	2.835	-0.591
0.485	78805.7	11.429	16114.4	2.837	-0.609
0.545	77478.2	11.287	16187.7	2.840	-0.690
0.591	77627.5	11.259	16157.0	2.848	-0.680
0.644	77584.0	11.252	16173.5	2.846	-0.682
0.691	77850.9	11.218	16190.9	2.848	-0.696
0.746	77619.2	11.257	16218.7	2.852	-0.678
0.794	78064.4	11.322	16239.8	2.855	-0.650
0.848	79119.6	11.475	16262.2	2.859	-0.584
0.896	79802.1	11.574	16284.4	2.862	-0.541
0.950	81169.4	11.772	16811.7	2.866	-0.457
FACE					
0.074	89479.6	12.977	15989.7	2.819	0.054
0.150	89824.1	12.955	16007.5	2.822	0.044
0.229	88939.9	12.899	16036.2	2.826	0.020
0.302	89018.7	12.911	16048.8	2.828	0.025
0.374	89184.1	12.927	16073.2	2.881	0.032
0.450	89522.7	12.984	16097.9	2.885	0.056
0.519	89851.4	12.959	16116.6	2.887	0.045
0.569	89428.6	12.970	16185.7	2.840	0.050
0.619	89259.6	12.946	16156.8	2.848	0.040
0.669	89848.8	12.958	16179.1	2.846	0.045
0.716	89235.6	12.942	16198.7	2.849	0.088
0.762	89005.4	12.909	16216.7	2.852	0.024
0.810	89220.6	12.940	16288.1	2.854	0.087
0.861	89105.8	12.928	16250.2	2.857	0.030
0.910	88866.8	12.889	16284.9	2.862	0.015
0.958	87595.6	12.704	16298.2	2.864	-0.068

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B3  
(B3.1 through B3.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.070 \pm 0.015$

Advance Ratio,  $J = 0.184 \pm 0.062$

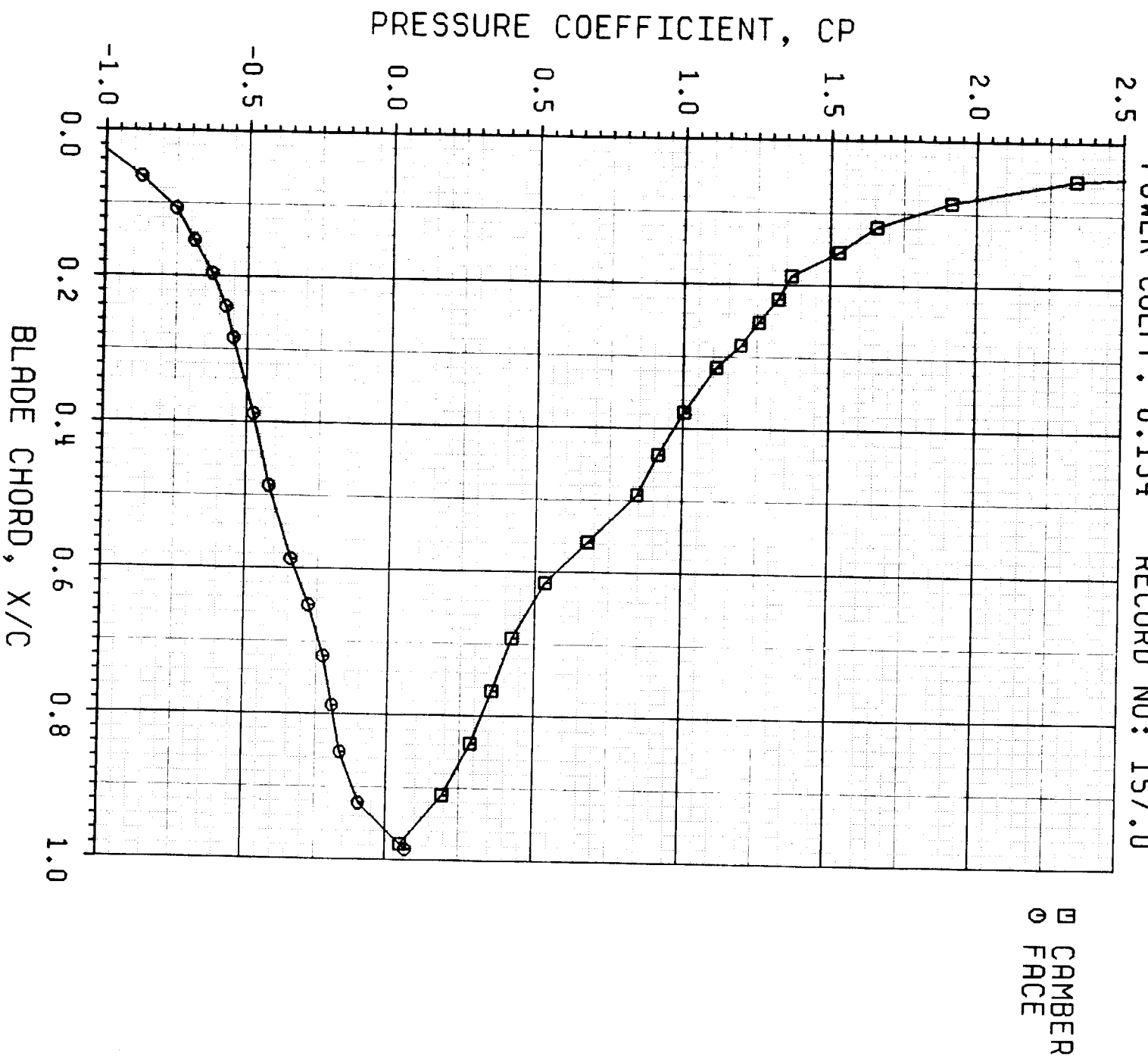
Power Coefficient,  $CP = 0.154 \pm 0.004$

Blade Angle,  $\beta = 19.4 \pm 0.8^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1    MACH NO: 0.03    ADV. RATIO: 0.185

POWER COEFF: 0.154    RECORD NO: 157.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 157.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	291.0 K	64.1 F
STATIC PRESSURE:	89110.0 PA	12.924 PSI
AIR DENSITY:	1.06669 KG/M3	0.066594 LBF/FT3
SPEED OF SOUND:	841.99 M/S	1122.05 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.26 M/S	33.66 FT/S

## PROPFAN:

---

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1201.0	
ADVANCE RATIO:	0.185	
POWER COEFFICIENT:	0.154	
BLADE ANGLE (@ X=41" STA):	18.7 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3838 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.331	
REL MACH NO. (@ MID CHORD):	0.171	

RUN DATE:	03-12-1987
RUN TIME:	16:27:14

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 167.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, PO: 89110.0 PA, 12.924 PSI

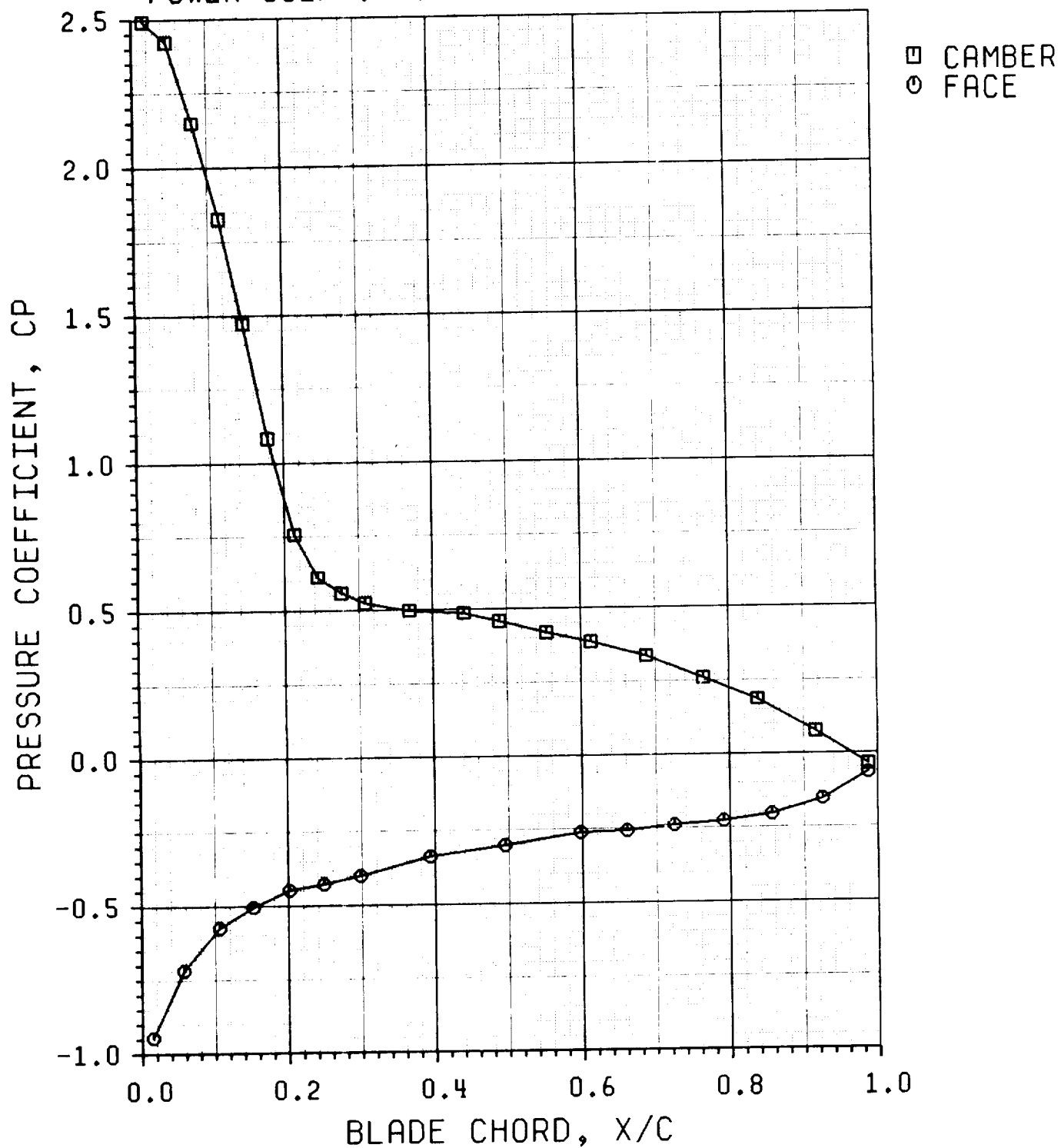
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	82448.2	11.957	1507.0	0.219	-4.424
0.053	85632.7	12.420	1486.0	0.216	-2.840
0.085	86302.1	12.517	1468.2	0.213	-1.912
0.119	86696.1	12.574	1455.5	0.211	-1.658
0.154	86902.3	12.604	1444.3	0.209	-1.529
0.187	87142.7	12.639	1439.6	0.209	-1.367
0.219	87210.2	12.648	1437.0	0.208	-1.322
0.252	87307.0	12.662	1435.6	0.208	-1.256
0.284	87392.9	12.675	1437.6	0.208	-1.194
0.315	87505.0	12.691	1444.8	0.210	-1.111
0.377	87642.4	12.711	1463.3	0.212	-1.003
0.436	87742.9	12.726	1494.2	0.217	-0.915
0.492	87832.7	12.739	1514.3	0.220	-0.844
0.558	88038.1	12.768	1580.3	0.229	-0.678
0.615	88240.4	12.798	1636.0	0.237	-0.532
0.692	88383.9	12.819	1717.0	0.249	-0.423
0.765	88462.2	12.830	1817.1	0.264	-0.357
0.838	88557.6	12.844	1920.2	0.278	-0.288
0.910	88718.2	12.867	2039.2	0.296	-0.192
0.978	89001.2	12.908	2160.3	0.313	-0.050
FACE					
0.018	90688.1	13.153	1524.0	0.221	1.035
0.063	90437.6	13.116	1518.9	0.220	0.874
0.107	90242.9	13.088	1506.6	0.219	0.752
0.151	90139.6	13.073	1494.5	0.217	0.689
0.196	90042.4	13.059	1488.5	0.216	0.626
0.241	89968.9	13.048	1485.1	0.215	0.578
0.284	89925.7	13.042	1484.0	0.215	0.550
0.388	89827.9	13.028	1505.1	0.218	0.477
0.487	89763.2	13.019	1552.2	0.225	0.421
0.587	89666.2	13.005	1623.0	0.235	0.343
0.650	89579.3	12.992	1676.3	0.243	0.280
0.720	89506.6	12.981	1750.7	0.254	0.227
0.788	89467.4	12.976	1837.7	0.267	0.194
0.852	89426.4	12.970	1930.0	0.280	0.164
0.922	89306.2	12.952	2042.0	0.296	0.096
0.985	88962.9	12.903	2157.3	0.313	-0.068

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.04    ADV. RATIO: 0.244

POWER COEFF: 0.153    RECORD NO: 209.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 209.0

## WIND TUNNEL:

---

STATIC TEMPERATURE:	282.0 K	47.9 F
STATIC PRESSURE:	88680.0 PA	12.861 PSI
AIR DENSITY:	1.09543 KG/M3	0.068387 LBF/FT3
SPEED OF SOUND:	336.66 M/S	1104.57 FT/S
INFLOW MACH NUMBER:	0.04	
INFLOW VELOCITY:	13.47 M/S	44.18 FT/S

## PROPFAN:

---

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1198.0	
ADVANCE RATIO:	0.244	
POWER COEFFICIENT:	0.153	
BLADE ANGLE (@ X=41" STA):	19.3 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3837 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.465	
REL MACH NO. (@ MID CHORD):	0.243	

RUN DATE:	03-13-1987
RUN TIME:	22:33:54

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 209.0

RADIAL STATION: 2

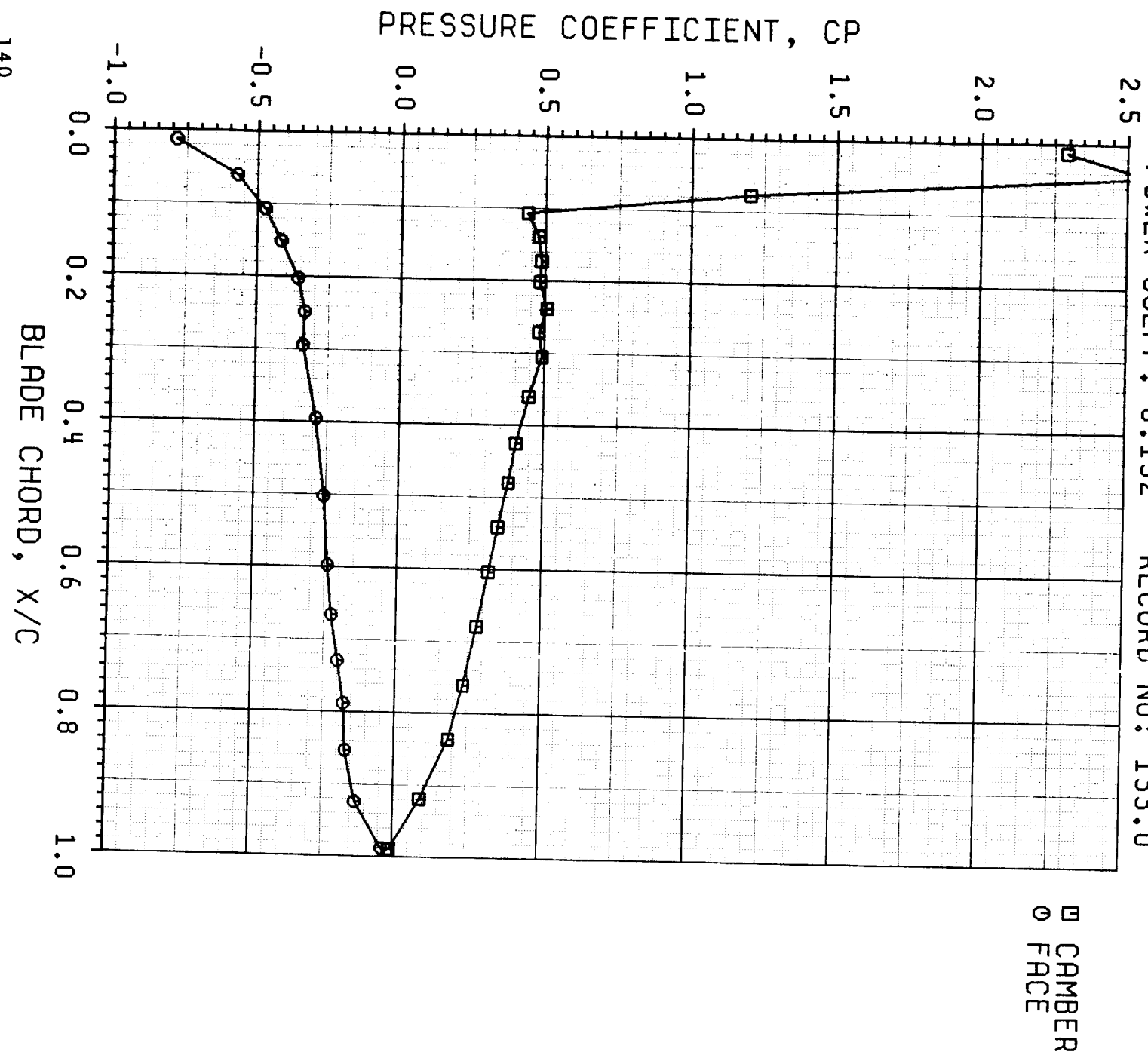
TUNNEL STATIC PRESSURE, PO: 88680.0 PA, 12.861 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	80059.4	11.611	3459.5	0.502	-2.492
0.046	80401.0	11.661	3417.7	0.496	-2.422
0.080	81433.2	11.810	3372.6	0.489	-2.149
0.115	82586.6	11.978	3335.9	0.484	-1.827
0.146	83816.8	12.156	3305.8	0.479	-1.471
0.178	85155.2	12.350	3255.3	0.472	-1.083
0.213	86223.1	12.505	3251.4	0.472	-0.756
0.244	86705.8	12.575	3233.6	0.469	-0.611
0.276	86889.4	12.602	3216.8	0.467	-0.557
0.308	87001.9	12.618	3207.8	0.465	-0.523
0.368	87093.1	12.631	3198.8	0.464	-0.496
0.442	87127.1	12.636	3197.1	0.464	-0.486
0.490	87208.6	12.648	3221.9	0.467	-0.457
0.553	87319.4	12.664	3254.6	0.472	-0.418
0.613	87408.3	12.677	3301.8	0.479	-0.385
0.688	87546.1	12.697	3375.7	0.490	-0.336
0.765	87777.4	12.731	3472.2	0.504	-0.260
0.838	88013.2	12.765	3587.2	0.520	-0.186
0.916	88400.3	12.821	3731.0	0.541	-0.075
0.987	88824.4	12.882	3874.9	0.562	0.037
FACE					
0.015	91965.2	13.338	3477.0	0.504	0.945
0.057	91137.1	13.218	3424.0	0.497	0.718
0.106	90617.5	13.142	3370.9	0.489	0.575
0.152	90362.1	13.105	3330.8	0.483	0.505
0.201	90155.1	13.075	3289.1	0.477	0.448
0.248	90077.1	13.064	3261.5	0.473	0.428
0.298	89975.7	13.049	3239.1	0.470	0.400
0.393	89767.5	13.019	3223.9	0.468	0.337
0.495	89659.1	13.003	3243.8	0.470	0.302
0.597	89548.1	12.987	3303.8	0.479	0.263
0.660	89544.7	12.987	3357.0	0.487	0.258
0.724	89501.2	12.981	3427.3	0.497	0.240
0.791	89482.9	12.978	3515.5	0.510	0.228
0.856	89423.4	12.969	3620.1	0.525	0.205
0.925	89256.6	12.945	3746.8	0.543	0.154
0.987	88935.2	12.899	3877.8	0.562	0.066

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.03    ADV. RATIO: 0.183

POWER COEFF: 0.152    RECORD NO: 133.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 183.0

WIND TUNNEL:

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STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	89160.0 PA	12.931 PSI
AIR DENSITY:	1.08217 KG/M3	0.067560 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.19 M/S	33.43 FT/S

PROPFAN:

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RADIAL STATION:	3	
ROTOR SPEED (RPM):	1205.0	
ADVANCE RATIO:	0.183	
POWER COEFFICIENT:	0.152	
BLADE ANGLE (@ X=41" STA):	20.0 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3836 M	54.47 IN.
RADIUS RATIO (@ MID CHORD):	0.584	
REL MACH NO. (@ MID CHORD):	0.302	

RUN DATE:	03-11-1987
RUN TIME:	20:32:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 133.0

RADIAL STATION: 8

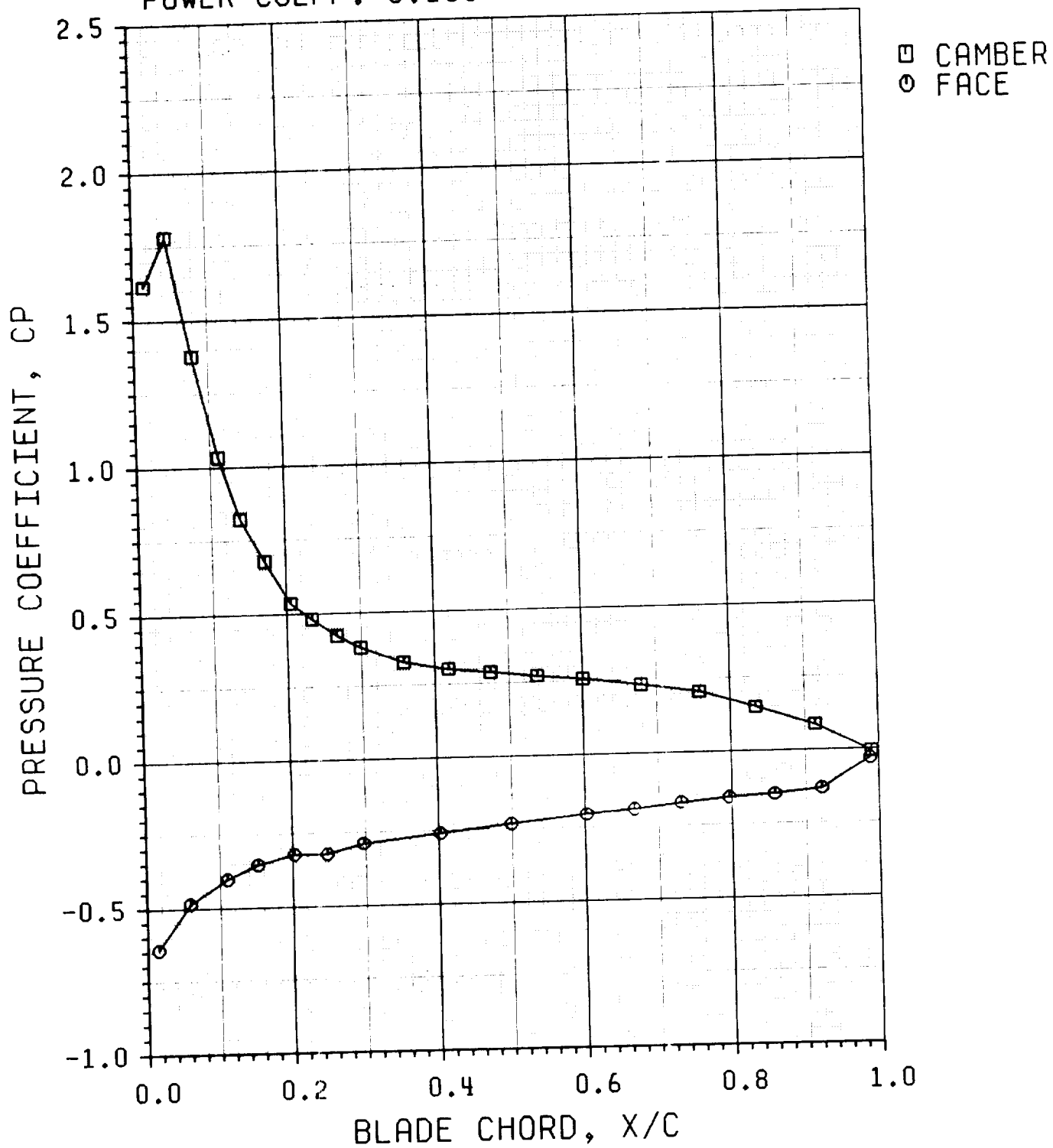
TUNNEL STATIC PRESSURE, PO: 89160.0 PA, 12.921 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	76520.3	11.098	5512.9	0.800	-2.293
0.046	75096.5	10.891	5458.5	0.792	-2.576
0.077	82671.9	11.990	5404.0	0.784	-1.201
0.107	86824.8	12.592	5860.7	0.777	-0.436
0.139	86627.4	12.564	5815.7	0.771	-0.476
0.173	86605.9	12.561	5270.9	0.764	-0.485
0.201	86637.4	12.565	5243.3	0.760	-0.481
0.238	86523.2	12.549	5208.3	0.755	-0.506
0.271	86674.9	12.571	5184.2	0.752	-0.479
0.305	86621.6	12.563	5166.8	0.749	-0.491
0.360	86861.1	12.598	5142.9	0.746	-0.447
0.425	87081.0	12.630	5136.3	0.745	-0.406
0.480	87200.7	12.647	5189.3	0.745	-0.381
0.541	87364.4	12.671	5172.2	0.750	-0.347
0.603	87510.8	12.692	5209.4	0.756	-0.317
0.679	87678.4	12.716	5291.1	0.767	-0.280
0.761	87886.6	12.746	5398.5	0.783	-0.236
0.836	88130.8	12.782	5527.2	0.802	-0.186
0.919	88648.6	12.857	5694.2	0.826	-0.090
0.989	89232.6	12.942	5859.5	0.850	0.012
FACE					
0.018	93495.6	13.560	5525.5	0.801	0.785
0.061	92279.0	13.383	5448.0	0.790	0.573
0.107	91708.4	13.301	5377.7	0.780	0.474
0.151	91377.4	13.253	5318.9	0.771	0.417
0.202	91042.7	13.204	5263.2	0.763	0.358
0.248	90896.2	13.183	5219.9	0.757	0.333
0.294	90907.4	13.185	5188.0	0.752	0.337
0.395	90649.7	13.147	5150.1	0.747	0.289
0.502	90489.6	13.124	5164.9	0.749	0.257
0.597	90412.4	13.113	5211.2	0.756	0.240
0.666	90345.6	13.103	5282.3	0.766	0.224
0.729	90229.4	13.086	5348.1	0.776	0.200
0.788	90120.8	13.070	5436.1	0.788	0.177
0.853	90100.5	13.068	5553.9	0.805	0.169
0.924	89915.2	13.041	5697.4	0.826	0.133
0.988	89387.0	12.964	5852.1	0.849	0.039

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4 MACH NO: 0.03 ADV. RATIO: 0.184

POWER COEFF: 0.153 RECORD NO: 197.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 197.0

WIND TUNNEL:

STATIC TEMPERATURE:	292.0 K	65.9 F
STATIC PRESSURE:	88680.0 PA	12.861 PSI
AIR DENSITY:	1.05791 KG/M3	0.066045 LBF/FT3
SPEED OF SOUND:	342.57 M/S	1123.98 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.28 M/S	33.72 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1208.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.153	
BLADE ANGLE (@ X=41" STA):	18.9 DEG.	
BLADE CHORD:	0.5676 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3837 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.678	
REL MACH NO. (@ MID CHORD):	0.348	

RUN DATE:	03-18-1987
RUN TIME:	17:34:00



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 197.0

RADIAL STATION: 4

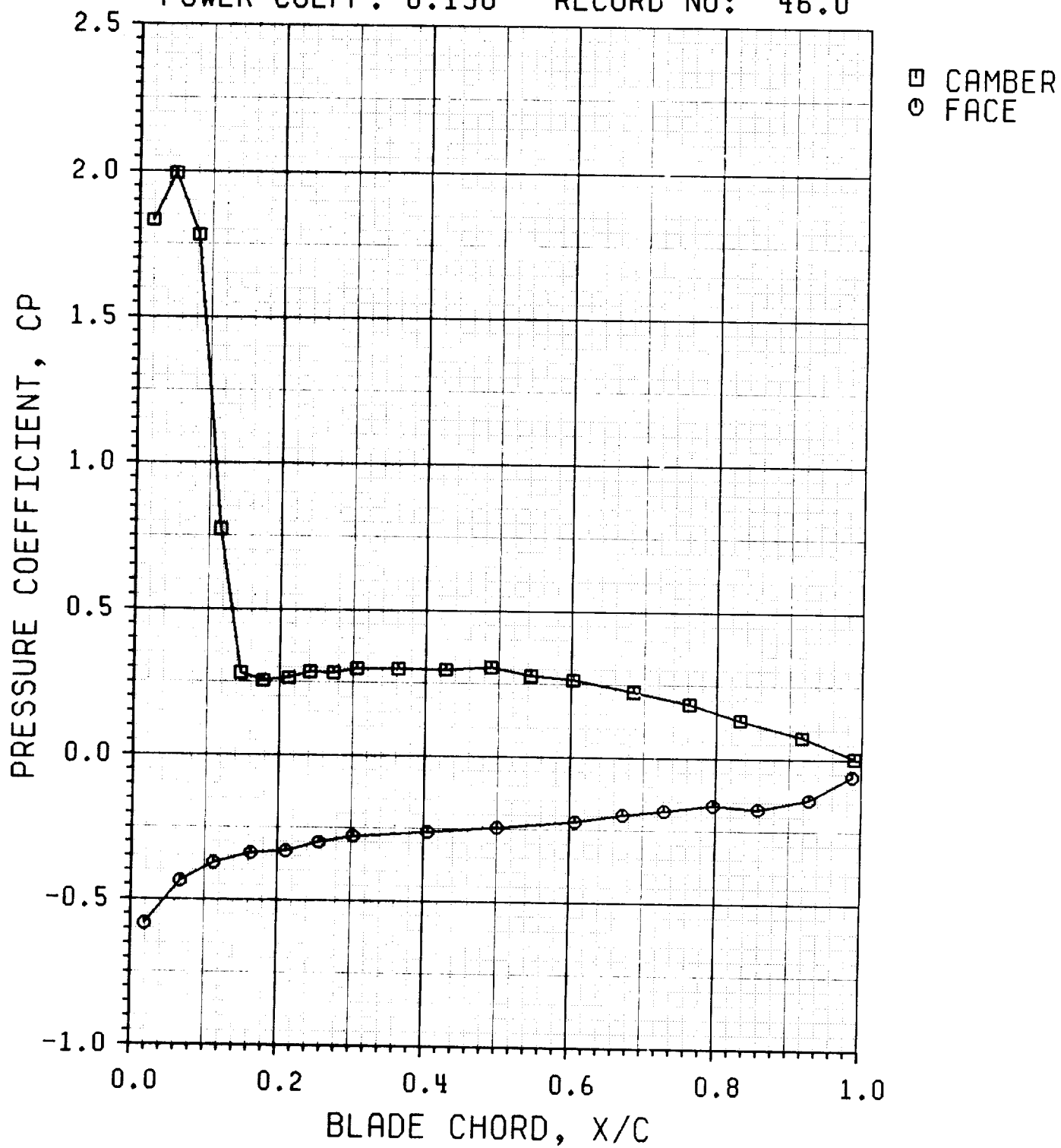
TUNNEL STATIC PRESSURE, PO: 88680.0 PA, 12.861 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	76906.6	11.154	7287.5	1.057	-1.616
0.045	75794.1	10.993	7287.4	1.050	-1.780
0.078	78801.9	11.429	7181.1	1.041	-1.876
0.111	81319.7	11.794	7182.0	1.034	-1.082
0.139	82838.5	12.014	7095.1	1.029	-0.823
0.171	83897.4	12.168	7054.6	1.023	-0.678
0.205	84923.4	12.317	7019.6	1.018	-0.535
0.234	85321.9	12.374	6991.8	1.014	-0.480
0.267	85741.2	12.435	6970.5	1.011	-0.422
0.299	86040.4	12.479	6948.6	1.008	-0.380
0.357	86415.7	12.538	6928.4	1.005	-0.327
0.418	86596.3	12.559	6922.7	1.004	-0.301
0.475	86688.3	12.573	6932.9	1.005	-0.287
0.538	86793.1	12.588	6963.8	1.010	-0.271
0.600	86880.3	12.600	7007.2	1.016	-0.257
0.679	87026.7	12.622	7095.7	1.029	-0.233
0.758	87207.0	12.648	7210.8	1.046	-0.204
0.834	87586.2	12.703	7352.6	1.066	-0.149
0.914	88033.1	12.768	7531.6	1.092	-0.086
0.990	88742.6	12.871	7723.5	1.120	0.008
FACE					
0.015	93366.9	13.541	7304.0	1.059	0.642
0.059	92178.9	13.369	7233.7	1.049	0.484
0.110	91559.2	13.279	7155.0	1.038	0.402
0.152	91203.9	13.228	7100.0	1.030	0.355
0.202	90950.6	13.191	7049.5	1.022	0.322
0.247	90938.8	13.189	7008.9	1.017	0.322
0.297	90697.3	13.154	6977.1	1.012	0.289
0.402	90487.8	13.124	6947.1	1.008	0.260
0.499	90307.0	13.097	6974.3	1.012	0.233
0.602	90129.7	13.072	7042.0	1.021	0.206
0.667	90050.4	13.060	7096.2	1.029	0.193
0.731	89928.3	13.043	7189.3	1.043	0.174
0.796	89844.4	13.030	7298.4	1.059	0.160
0.858	89796.5	13.023	7413.6	1.075	0.151
0.922	89692.7	13.008	7555.5	1.096	0.134
0.988	88937.3	12.899	7722.7	1.120	0.033

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.02 ADV. RATIO: 0.122

POWER COEFF: 0.150 RECORD NO: 46.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 46.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	285.0 K	53.8 F
STATIC PRESSURE:	89280.0 PA	12.949 PSI
AIR DENSITY:	1.09123 KG/M3	0.068125 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.77 M/S	22.21 FT/S

## PROPFAN:

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RADIAL STATION:	5	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.150	
BLADE ANGLE (@ X=41" STA):	18.8 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3838 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.744	
REL MACH NO. (@ MID CHORD):	0.383	

RUN DATE:	03-06-1987
RUN TIME:	16:19:44

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 46.0

RADIAL STATION: 5

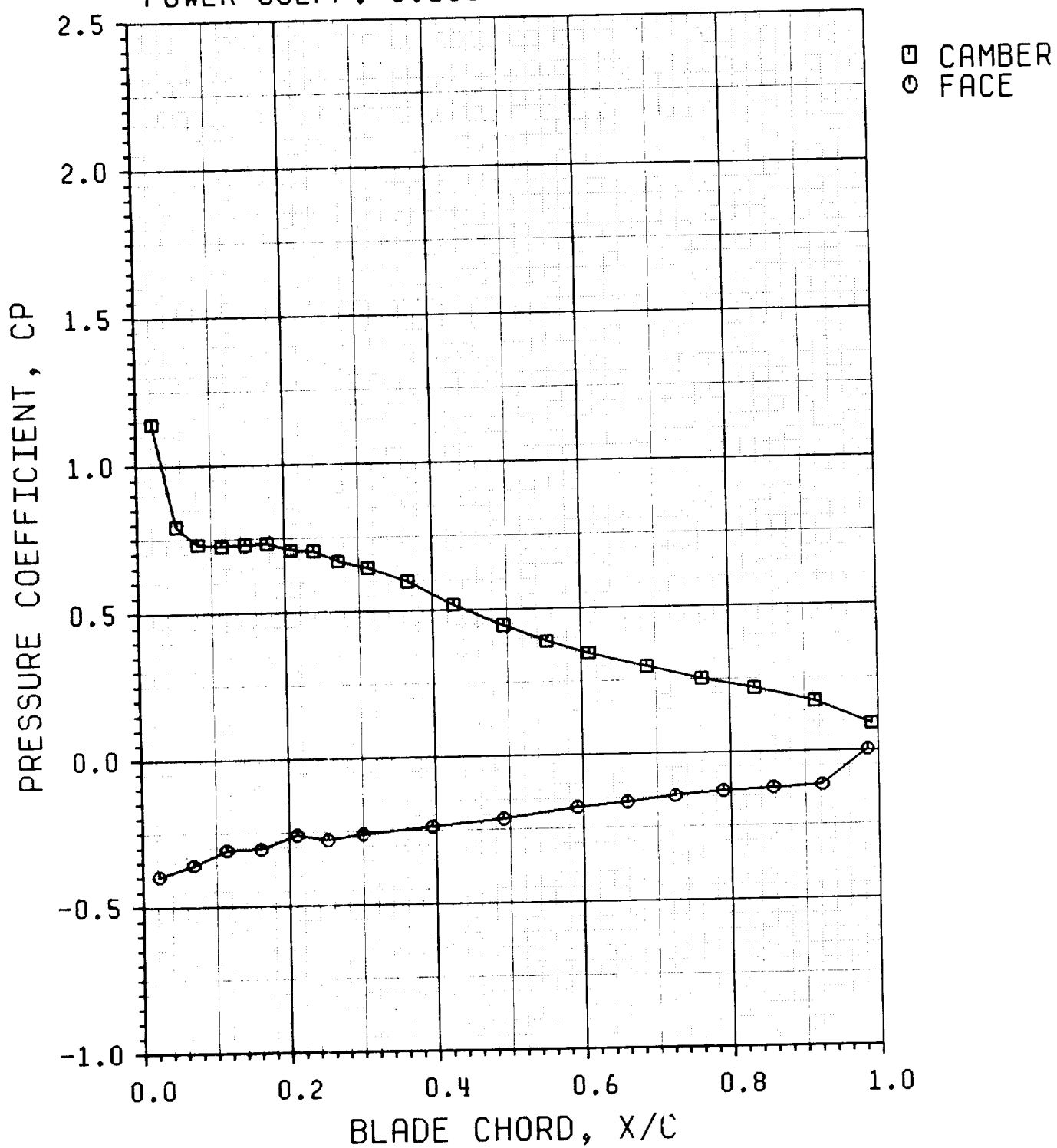
TUNNEL STATIC PRESSURE, PO: 89280.0 PA, 12.949 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	72968.4	10.583	8908.2	1.292	-1.831
0.050	71612.2	10.386	8860.3	1.285	-1.994
0.082	73582.1	10.672	8812.1	1.278	-1.781
0.116	82498.2	11.965	8770.2	1.272	-0.773
0.146	86836.7	12.594	8735.1	1.267	-0.280
0.177	87065.2	12.627	8704.5	1.262	-0.254
0.212	86991.6	12.617	8675.7	1.258	-0.264
0.241	86812.2	12.591	8655.3	1.255	-0.285
0.273	86840.1	12.595	8637.0	1.253	-0.282
0.305	86720.1	12.577	8623.0	1.251	-0.297
0.362	86709.8	12.576	8612.4	1.249	-0.298
0.427	86729.5	12.579	8617.0	1.250	-0.296
0.489	86645.9	12.566	8632.5	1.252	-0.305
0.544	86882.8	12.601	8665.4	1.257	-0.277
0.602	86981.1	12.615	8719.5	1.265	-0.264
0.685	87299.8	12.661	8812.3	1.278	-0.225
0.762	87632.1	12.710	8926.2	1.295	-0.185
0.832	88091.1	12.776	9051.7	1.318	-0.181
0.917	88600.6	12.850	9234.8	1.339	-0.074
0.990	89260.8	12.946	9413.1	1.365	-0.002
FACE					
0.019	94474.8	13.702	8920.2	1.294	0.582
0.067	98155.7	13.511	8846.4	1.283	0.488
0.112	92572.1	13.426	8782.8	1.274	0.375
0.163	92251.7	13.380	8780.8	1.266	0.340
0.211	92167.9	13.367	8693.4	1.261	0.332
0.256	91888.3	13.327	8665.3	1.257	0.301
0.308	91690.2	13.298	8642.6	1.253	0.279
0.405	91541.6	13.277	8623.5	1.251	0.262
0.500	91400.7	13.256	8649.1	1.254	0.245
0.607	91222.7	13.230	8735.1	1.267	0.222
0.672	91009.6	13.199	8802.0	1.277	0.197
0.729	90895.8	13.183	8884.4	1.289	0.182
0.796	90736.8	13.160	8990.3	1.304	0.162
0.858	90859.8	13.178	9103.8	1.320	0.174
0.928	90587.9	13.138	9257.1	1.343	0.141
0.987	89840.6	13.030	9403.7	1.364	0.060

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6    MACH NO: 0.04    ADV. RATIO: 0.246

POWER COEFF: 0.156    RECORD NO: 184.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 184.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	88840.0 PA	12.885 PSI
AIR DENSITY:	1.07454 KG/M3	0.067083 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.04	
INFLOW VELOCITY:	13.61 M/S	44.65 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1197.0	
ADVANCE RATIO:	0.246	
POWER COEFFICIENT:	0.156	
BLADE ANGLE (@ X=41" STA):	18.9 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3837 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.807	
REL MACH NO. (@ MID CHORD):	0.414	

RUN DATE:	03-13-1987
RUN TIME:	13:39:26

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 184.0

RADIAL STATION: 6

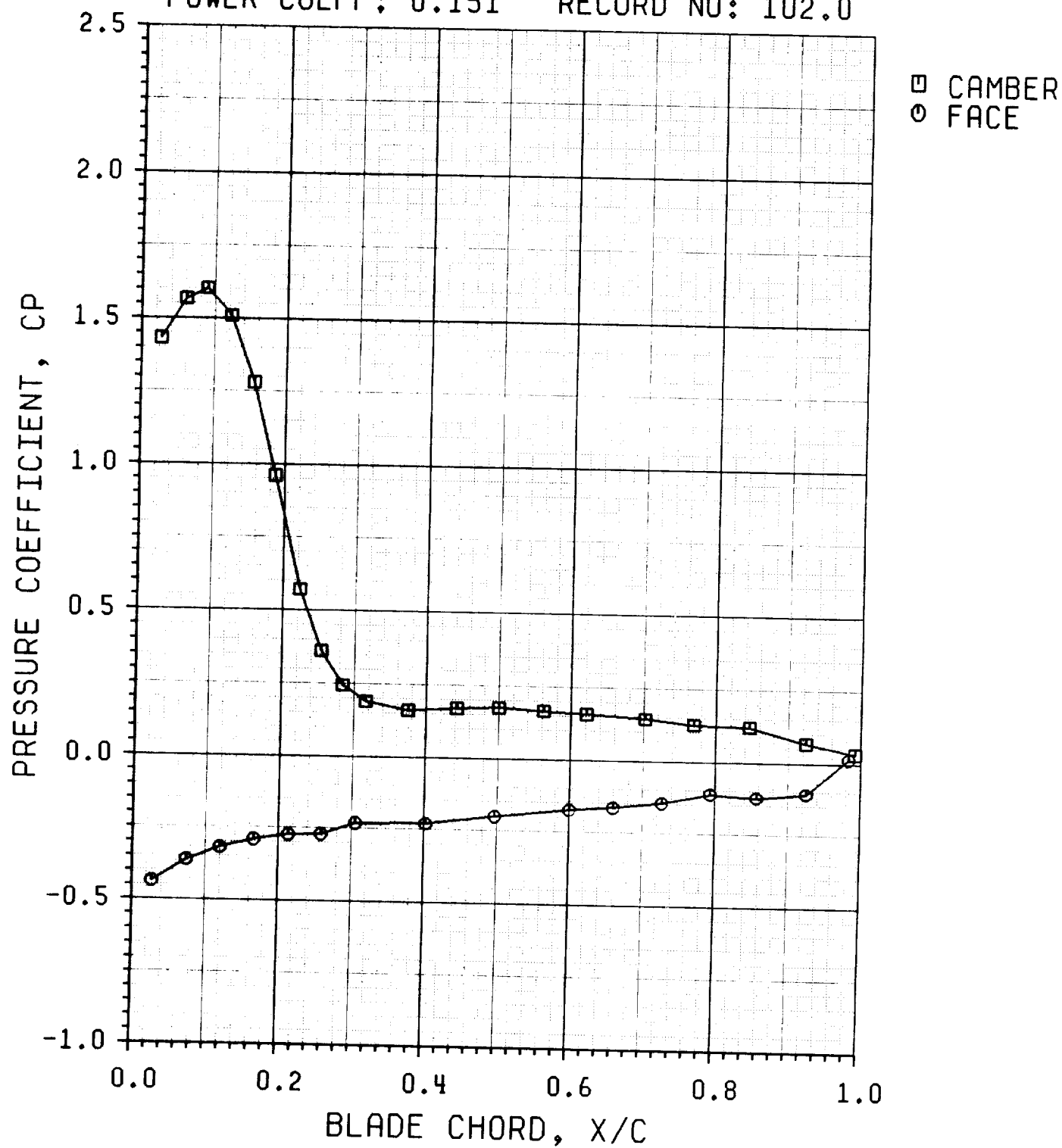
TUNNEL STATIC PRESSURE, PO: 88840.0 PA, 12.885 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	77058.4	11.176	10326.7	1.498	-1.141
0.053	80683.8	11.702	10298.1	1.494	-0.792
0.082	81327.1	11.795	10274.3	1.490	-0.731
0.114	81418.1	11.808	10258.4	1.488	-0.724
0.146	81365.8	11.801	10240.6	1.485	-0.730
0.176	81359.2	11.800	10216.6	1.482	-0.732
0.208	81603.5	11.835	10204.8	1.480	-0.709
0.239	81653.2	11.842	10200.0	1.479	-0.705
0.272	82024.5	11.896	10192.3	1.478	-0.669
0.312	82268.6	11.931	10191.9	1.478	-0.645
0.366	82749.1	12.001	10198.9	1.479	-0.597
0.428	83564.6	12.120	10219.9	1.482	-0.516
0.495	84279.1	12.223	10248.2	1.486	-0.445
0.558	84833.7	12.304	10286.8	1.492	-0.389
0.610	85260.9	12.366	10337.0	1.499	-0.346
0.688	85742.1	12.435	10426.8	1.512	-0.297
0.762	86185.1	12.500	10532.3	1.528	-0.252
0.833	86531.4	12.550	10649.0	1.544	-0.217
0.914	87002.7	12.618	10797.5	1.566	-0.170
0.991	87837.6	12.739	10957.7	1.589	-0.091
FACE					
0.022	92953.7	13.481	10331.6	1.498	0.398
0.069	92531.2	13.420	10290.1	1.492	0.359
0.114	92010.5	13.345	10257.7	1.488	0.309
0.161	91972.0	13.339	10227.9	1.483	0.306
0.210	91499.1	13.270	10211.4	1.481	0.260
0.252	91679.5	13.297	10199.1	1.479	0.278
0.300	91491.8	13.269	10188.8	1.478	0.260
0.394	91266.9	13.237	10203.5	1.480	0.238
0.491	91044.0	13.204	10242.3	1.485	0.215
0.591	90701.1	13.155	10322.9	1.497	0.180
0.659	90558.9	13.134	10388.3	1.507	0.165
0.724	90365.2	13.106	10471.9	1.519	0.146
0.789	90240.4	13.088	10562.7	1.532	0.133
0.857	90162.2	13.076	10684.4	1.550	0.124
0.923	90096.1	13.067	10810.7	1.568	0.116
0.985	88803.5	12.879	10941.9	1.587	-0.003

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7    MACH NO: 0.02    ADV. RATIO: 0.124

POWER COEFF: 0.151    RECORD NO: 102.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 102.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	294.0 K	69.5 F
STATIC PRESSURE:	88980.0 PA	12.905 PSI
AIR DENSITY:	1.05427 KG/M3	0.065818 LBF/FT3
SPEED OF SOUND:	343.74 M/S	1127.82 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.87 M/S	22.56 FT/S

## PROPFAN:

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RADIAL STATION:	7	
ROTOR SPEED (RPM):	1205.0	
ADVANCE RATIO:	0.124	
POWER COEFFICIENT:	0.151	
BLADE ANGLE (@ X=41" STA):	20.2 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3835 M	54.47 IN.
RADIUS RATIO (@ MID CHORD):	0.860	
REL MACH NO. (@ MID CHORD):	0.437	

RUN DATE:	03-10-1987
RUN TIME:	18:19:43

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 102.0

RADIAL STATION: 7

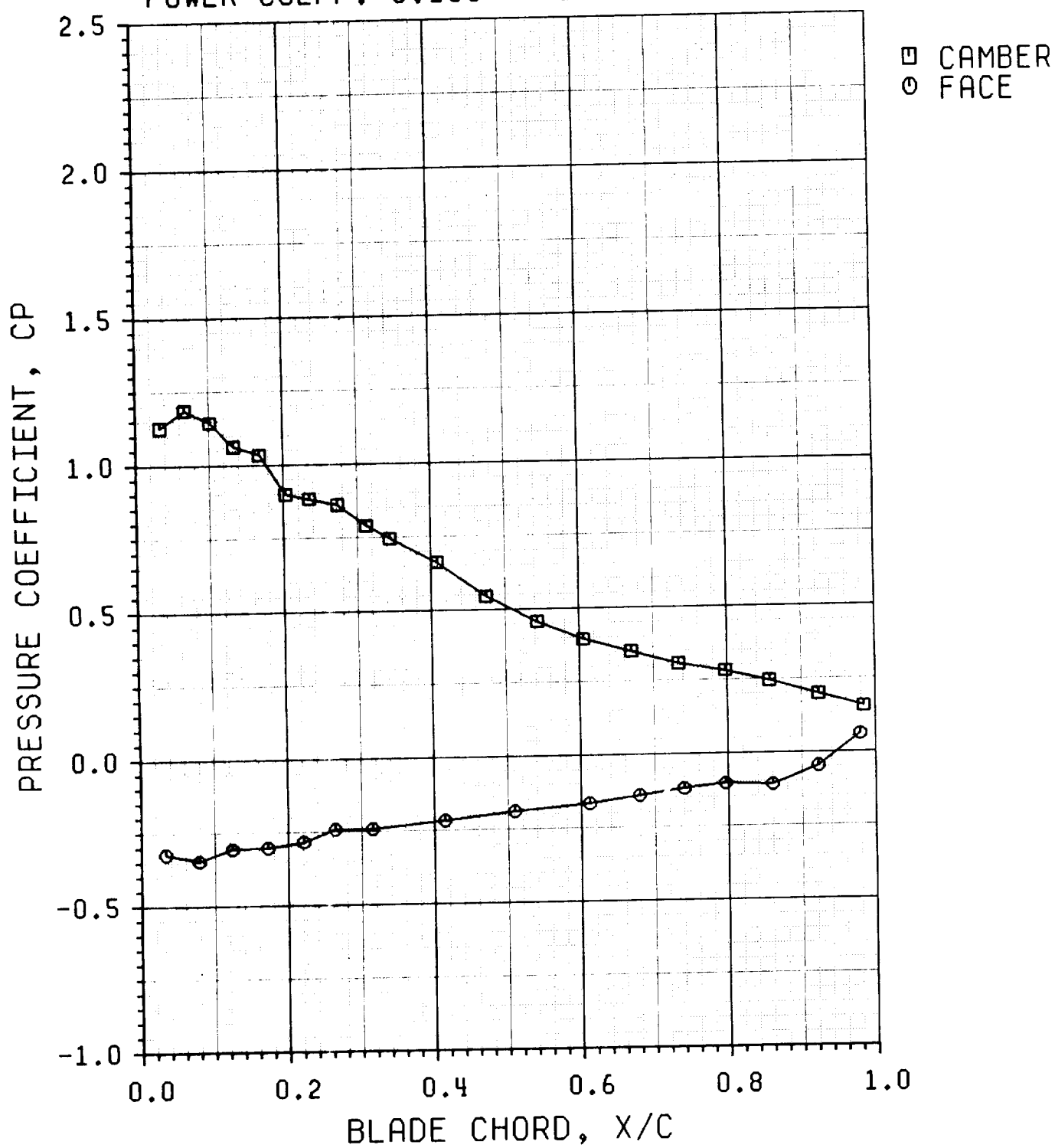
TUNNEL STATIC PRESSURE, PO: 88980.0 PA, 12.905 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	72422.6	10.504	11574.8	1.679	-1.430
0.061	70869.6	10.278	11566.8	1.678	-1.566
0.090	70465.8	10.220	11561.9	1.677	-1.601
0.123	71541.9	10.376	11553.7	1.676	-1.509
0.156	74196.9	10.761	11546.7	1.675	-1.280
0.187	77902.2	11.298	11538.9	1.674	-0.960
0.223	82412.2	11.952	11545.0	1.674	-0.569
0.254	84805.5	12.300	11552.7	1.676	-0.361
0.284	86165.1	12.497	11554.5	1.676	-0.244
0.316	86800.5	12.589	11562.2	1.677	-0.189
0.375	87131.1	12.637	11579.2	1.679	-0.160
0.442	87004.7	12.619	11610.6	1.684	-0.170
0.500	86951.6	12.611	11652.7	1.690	-0.174
0.562	87031.7	12.622	11702.5	1.697	-0.166
0.621	87120.6	12.635	11753.1	1.705	-0.158
0.702	87270.7	12.657	11850.1	1.719	-0.144
0.769	87475.6	12.687	11930.4	1.730	-0.126
0.846	87527.1	12.694	12038.9	1.746	-0.121
0.924	88157.2	12.786	12165.2	1.764	-0.068
0.992	88575.9	12.846	12284.1	1.782	-0.083
FACE					
0.027	94030.3	13.637	11570.0	1.678	0.487
0.074	98189.1	13.515	11561.3	1.677	0.364
0.120	92690.3	13.443	11542.2	1.674	0.321
0.166	92357.0	13.395	11546.1	1.675	0.292
0.213	92155.3	13.366	11533.3	1.673	0.275
0.258	92117.9	13.360	11542.6	1.674	0.272
0.305	91657.2	13.293	11552.5	1.675	0.232
0.402	91655.2	13.293	11588.6	1.681	0.231
0.497	91340.2	13.247	11649.0	1.689	0.203
0.600	91044.0	13.204	11728.1	1.701	0.176
0.660	90931.0	13.188	11786.9	1.709	0.166
0.727	90731.4	13.159	11869.1	1.721	0.148
0.793	90843.5	13.103	11960.1	1.735	0.114
0.857	90473.6	13.122	12057.3	1.749	0.124
0.925	90301.7	13.097	12168.0	1.765	0.109
0.983	88796.5	12.878	12275.2	1.780	-0.015

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.03    ADV. RATIO: 0.183

POWER COEFF: 0.153    RECORD NO: 170.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 170.0

WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	89250.0 PA	12.944 PSI
AIR DENSITY:	1.08326 KG/M3	0.067628 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.82 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.19 M/S	33.48 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1205.0	
ADVANCE RATIO:	0.183	
POWER COEFFICIENT:	0.153	
BLADE ANGLE (@ X=41" STA):	18.7 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3838 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.903	
REL MACH NO. (@ MID CHORD):	0.465	

RUN DATE:	03-12-1987
RUN TIME:	20:07:28

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 170.0

RADIAL STATION: 8

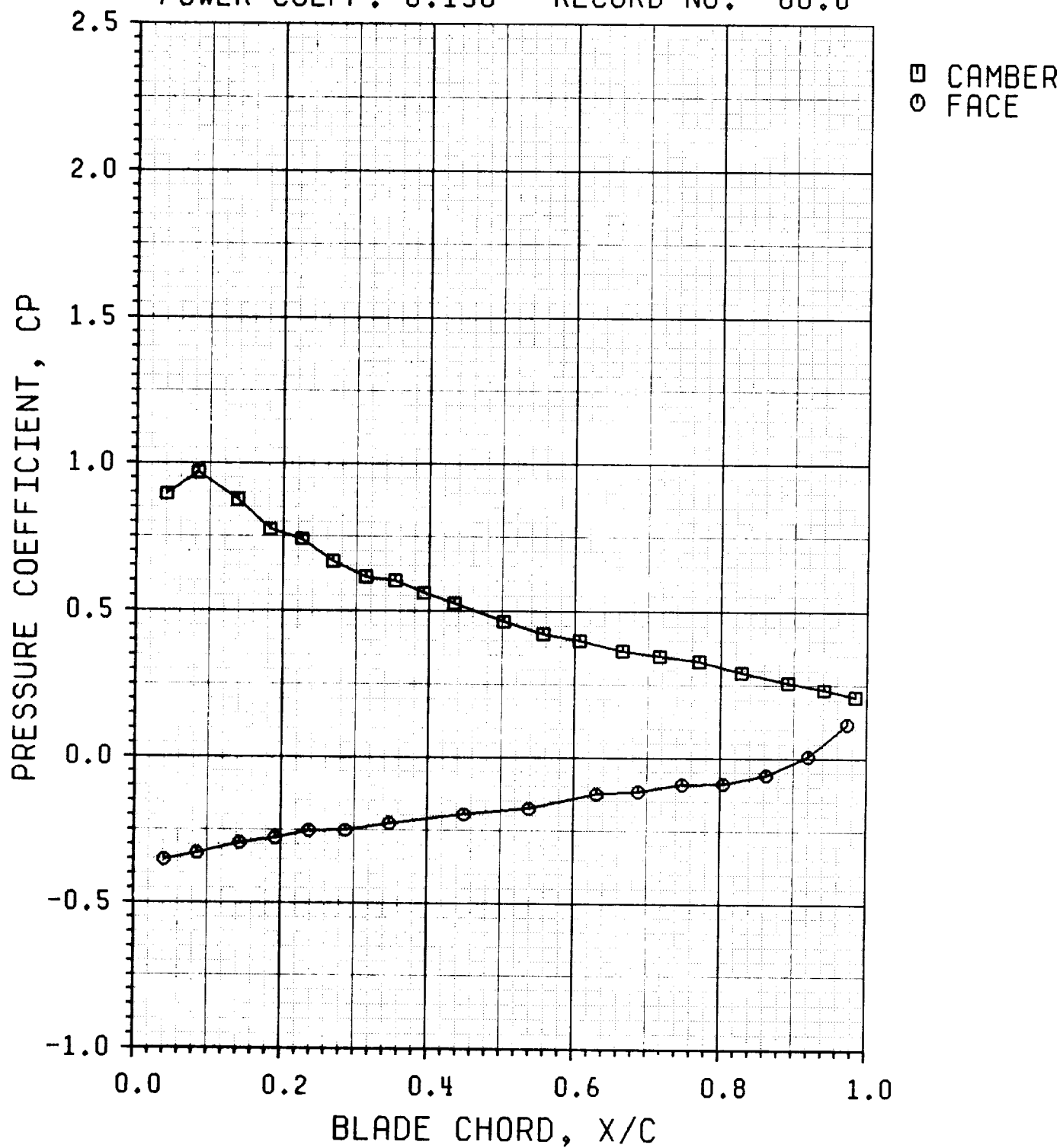
TUNNEL STATIC PRESSURE, PO: 89250.0 PA, 12.944 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.038	74373.9	10.787	13184.4	1.912	-1.128
0.067	73615.0	10.677	13184.3	1.912	-1.186
0.101	74166.8	10.757	13184.5	1.912	-1.144
0.133	75239.5	10.912	13188.0	1.913	-1.062
0.168	75594.1	10.964	13201.1	1.915	-1.034
0.203	77409.5	11.227	13203.3	1.915	-0.897
0.235	77613.8	11.256	13208.0	1.916	-0.881
0.273	77877.1	11.295	13226.5	1.918	-0.860
0.312	78803.6	11.429	13244.1	1.921	-0.789
0.344	79383.1	11.513	13257.4	1.923	-0.744
0.408	80462.1	11.670	13292.7	1.928	-0.661
0.474	82002.1	11.893	13332.4	1.934	-0.544
0.543	83142.6	12.058	13380.0	1.941	-0.456
0.605	83950.9	12.176	13489.5	1.949	-0.394
0.670	84505.7	12.256	13500.9	1.958	-0.351
0.734	85072.9	12.338	13566.2	1.968	-0.308
0.797	85415.4	12.388	13647.5	1.979	-0.281
0.857	85888.2	12.457	13713.3	1.989	-0.245
0.923	86508.2	12.547	13814.2	2.004	-0.198
0.984	87109.8	12.634	13894.9	2.015	-0.154
FACE					
0.033	93487.9	13.559	13176.5	1.911	0.322
0.079	93815.7	13.606	13176.9	1.911	0.346
0.124	93290.3	13.530	13186.1	1.912	0.306
0.172	93252.2	13.525	13188.0	1.913	0.303
0.221	92994.1	13.487	13193.1	1.913	0.284
0.264	92452.4	13.409	13210.1	1.916	0.242
0.315	92449.1	13.408	13230.1	1.919	0.242
0.414	92136.1	13.363	13283.0	1.926	0.217
0.509	91785.2	13.312	13346.1	1.936	0.190
0.611	91499.9	13.270	13434.7	1.948	0.167
0.679	91179.7	13.224	13497.8	1.958	0.143
0.740	90884.5	13.181	13562.0	1.967	0.121
0.796	90678.9	13.151	13628.1	1.977	0.105
0.860	90753.3	13.162	13709.2	1.988	0.110
0.922	89919.1	13.041	13806.3	2.002	0.048
0.979	88433.6	12.826	13890.1	2.015	-0.059

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.02 ADV. RATIO: 0.124

POWER COEFF: 0.158 RECORD NO: 88.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 88.0

WIND TUNNEL:

STATIC TEMPERATURE:	291.0 K	64.1 F
STATIC PRESSURE:	88920.0 PA	12.896 PSI
AIR DENSITY:	1.06442 KG/M3	0.066452 LBF/FT3
SPEED OF SOUND:	341.99 M/S	1122.06 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.84 M/S	22.44 FT/S

PROPFAN:

RADIAL STATION:	9	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.124	
POWER COEFFICIENT:	0.158	
BLADE ANGLE (@ X=41" STA):	20.2 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3835 M	54.47 IN.
RADIUS RATIO (@ MID CHORD):	0.938	
REL MACH NO. (@ MID CHORD):	0.477	

RUN DATE:	08-10-1987
RUN TIME:	14:42:54

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 88.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 88920.0 PA, 12.896 PSI

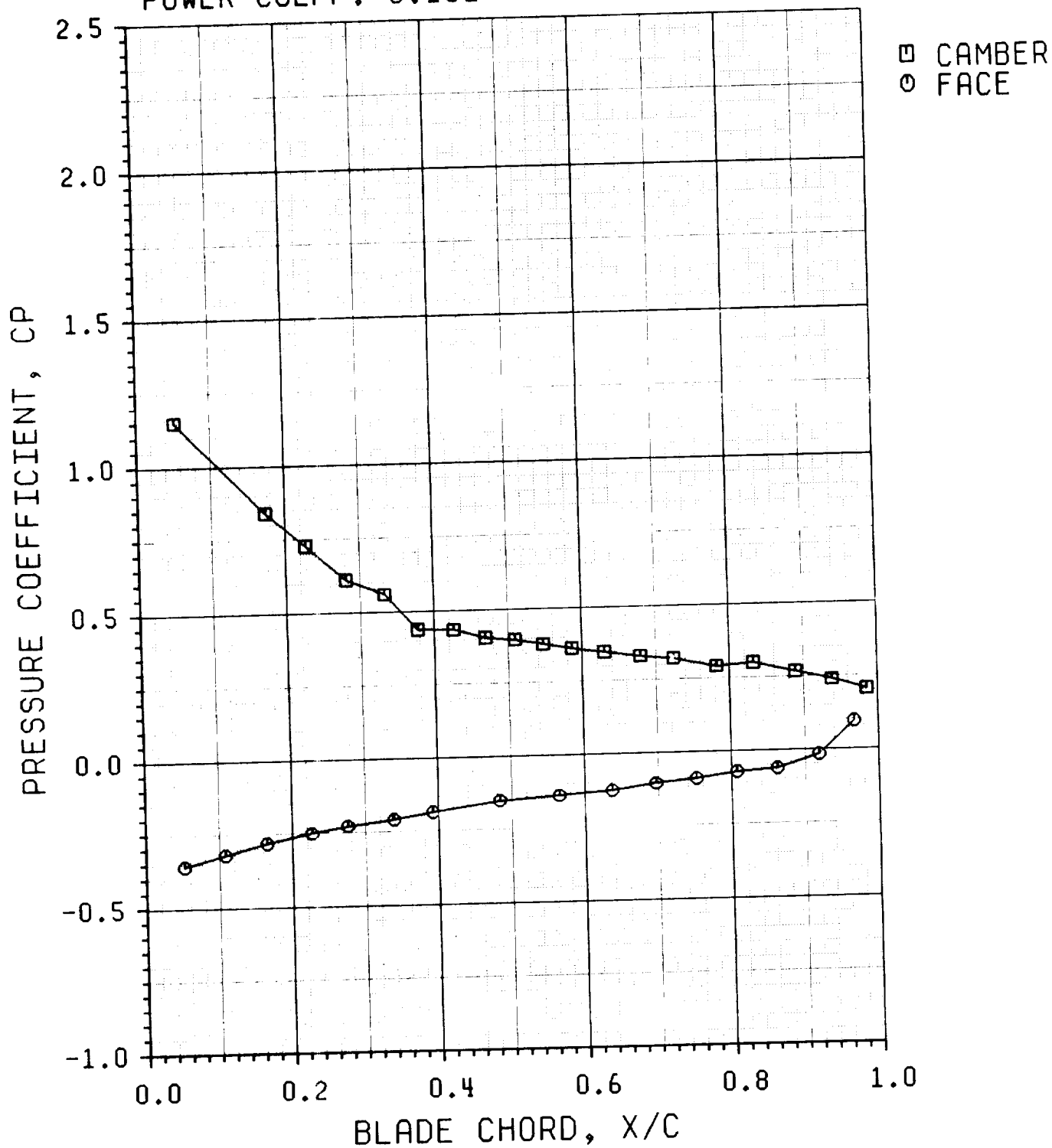
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	76498.9	11.094	13899.9	2.016	-0.894
0.084	75449.2	10.943	13918.0	2.018	-0.968
0.138	76738.6	11.129	13925.6	2.020	-0.875
0.182	78128.5	11.331	13934.9	2.021	-0.774
0.225	78580.4	11.397	13958.7	2.024	-0.741
0.268	79634.6	11.550	13960.8	2.025	-0.665
0.313	80346.9	11.653	13980.9	2.028	-0.613
0.353	80522.5	11.678	13996.7	2.030	-0.600
0.392	81082.4	11.760	14017.9	2.033	-0.559
0.434	81567.8	11.830	14036.4	2.036	-0.524
0.502	82894.2	11.950	14075.0	2.041	-0.464
0.556	82951.8	12.031	14110.0	2.046	-0.423
0.606	83255.9	12.075	14150.2	2.052	-0.400
0.665	83741.1	12.145	14184.7	2.057	-0.365
0.716	83990.2	12.181	14226.0	2.063	-0.347
0.770	84213.7	12.214	14265.5	2.069	-0.330
0.828	84719.6	12.287	14320.8	2.077	-0.293
0.892	85219.7	12.360	14377.9	2.085	-0.257
0.941	85547.4	12.407	14428.8	2.092	-0.234
0.984	85876.4	12.455	14462.2	2.097	-0.210
FACE					
0.041	93819.7	18.607	13898.1	2.016	0.353
0.086	93509.1	18.562	13909.4	2.017	0.330
0.144	93019.2	18.491	13918.8	2.019	0.295
0.192	92791.2	18.458	13932.0	2.021	0.278
0.238	92434.9	18.406	13946.1	2.023	0.252
0.288	92421.7	18.404	13964.3	2.025	0.251
0.348	92102.3	18.358	13990.8	2.029	0.227
0.450	91673.4	18.296	14036.5	2.036	0.196
0.539	91397.2	18.256	14097.6	2.045	0.176
0.631	90702.9	18.155	14158.4	2.053	0.126
0.688	90586.9	18.138	14198.3	2.059	0.117
0.748	90251.6	18.089	14242.4	2.066	0.093
0.804	90201.7	18.082	14296.9	2.074	0.090
0.863	89783.2	13.021	14347.4	2.081	0.060
0.920	88848.7	12.886	14401.2	2.089	-0.005
0.973	87231.1	12.651	14454.3	2.096	-0.117

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10    MACH NO: 0.03    ADV. RATIO: 0.184

POWER COEFF: 0.151    RECORD NO: 148.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 148.0

WIND TUNNEL:

STATIC TEMPERATURE:	290.0 K	62.3 F
STATIC PRESSURE:	89150.0 PA	12.930 PSI
AIR DENSITY:	1.07085 KG/M3	0.066853 LBF/FT3
SPEED OF SOUND:	341.40 M/S	1120.12 FT/S
INFLOW MACH NUMBER:	0.08	
INFLOW VELOCITY:	10.24 M/S	33.60 FT/S

PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1209.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.151	
BLADE ANGLE (@ X=41" STA):	18.8 DEG.	
BLADE CHORD:	0.2064 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3838 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.964	
REL MACH NO. (@ MID CHORD):	0.496	

RUN DATE:	08-12-1987
RUN TIME:	13:48:19

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 148.0

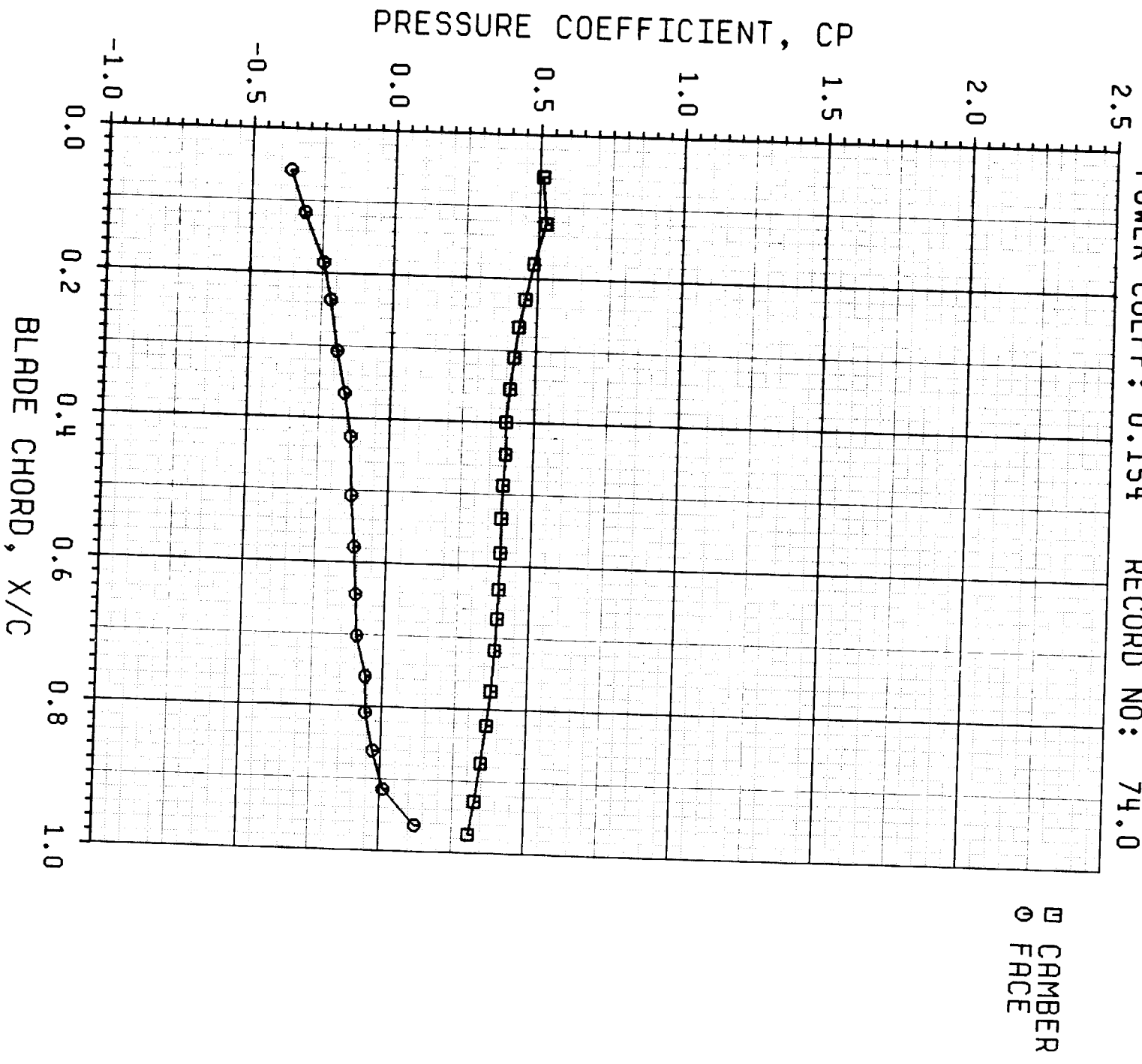
RADIAL STATION: 10

TUNNEL STATIC PRESSURE, PO: 89150.0 PA, 12.930 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	71761.3	10.408	15110.0	2.191	-1.151
0.118	*****	*****	15129.8	2.194	*****
0.173	76433.9	11.085	15142.2	2.196	-0.840
0.227	78128.6	11.331	15156.5	2.198	-0.727
0.281	79893.4	11.587	15175.3	2.201	-0.610
0.383	80653.2	11.697	15202.5	2.205	-0.559
0.377	82483.4	11.963	15211.1	2.206	-0.438
0.426	82530.4	11.970	15235.3	2.210	-0.434
0.469	82971.2	12.034	15261.1	2.213	-0.405
0.509	83107.1	12.053	15275.1	2.215	-0.396
0.547	83354.9	12.089	15295.3	2.218	-0.379
0.586	83583.9	12.122	15321.4	2.222	-0.363
0.630	83819.8	12.157	15336.9	2.224	-0.348
0.679	84061.9	12.192	15368.4	2.229	-0.331
0.724	84204.1	12.212	15397.7	2.233	-0.321
0.782	84662.9	12.279	15432.3	2.238	-0.291
0.832	84516.8	12.258	15468.3	2.243	-0.300
0.889	85014.0	12.330	15508.4	2.249	-0.267
0.938	85439.4	12.392	15550.2	2.255	-0.239
0.985	85954.2	12.466	15582.1	2.260	-0.205
FACE					
0.052	94548.0	13.713	15097.2	2.190	0.358
0.108	93992.3	13.632	15112.1	2.192	0.320
0.165	93431.2	13.551	15129.8	2.194	0.283
0.227	92951.2	13.481	15147.1	2.197	0.251
0.276	92621.7	13.433	15160.1	2.199	0.229
0.339	92341.7	13.393	15181.5	2.202	0.210
0.392	91996.6	13.343	15203.3	2.205	0.187
0.484	91504.2	13.271	15249.1	2.212	0.154
0.565	91302.2	13.242	15291.3	2.218	0.141
0.637	91101.7	13.213	15327.3	2.223	0.127
0.697	90779.8	13.166	15364.8	2.228	0.106
0.752	90578.1	13.137	15408.0	2.235	0.093
0.807	90282.1	13.094	15439.2	2.239	0.073
0.862	90121.1	13.070	15482.6	2.245	0.063
0.919	89413.2	12.968	15528.7	2.252	0.017
0.967	87666.2	12.714	15562.2	2.257	-0.095

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11    MACH NO: 0.02    ADV. RATIO: 0.122  
POWER COEFF: 0.154    RECORD NO: 74.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 74.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	88840.0 PA	12.885 PSI
AIR DENSITY:	1.08205 KG/M3	0.067653 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.78 M/S	22.25 FT/S

## PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1203.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.154	
BLADE ANGLE (@ X=41" STA):	19.5 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3837 M	54.47 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.502	

RUN DATE:	03-09-1987
RUN TIME:	20:58:58

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 74.0

RADIAL STATION: 11

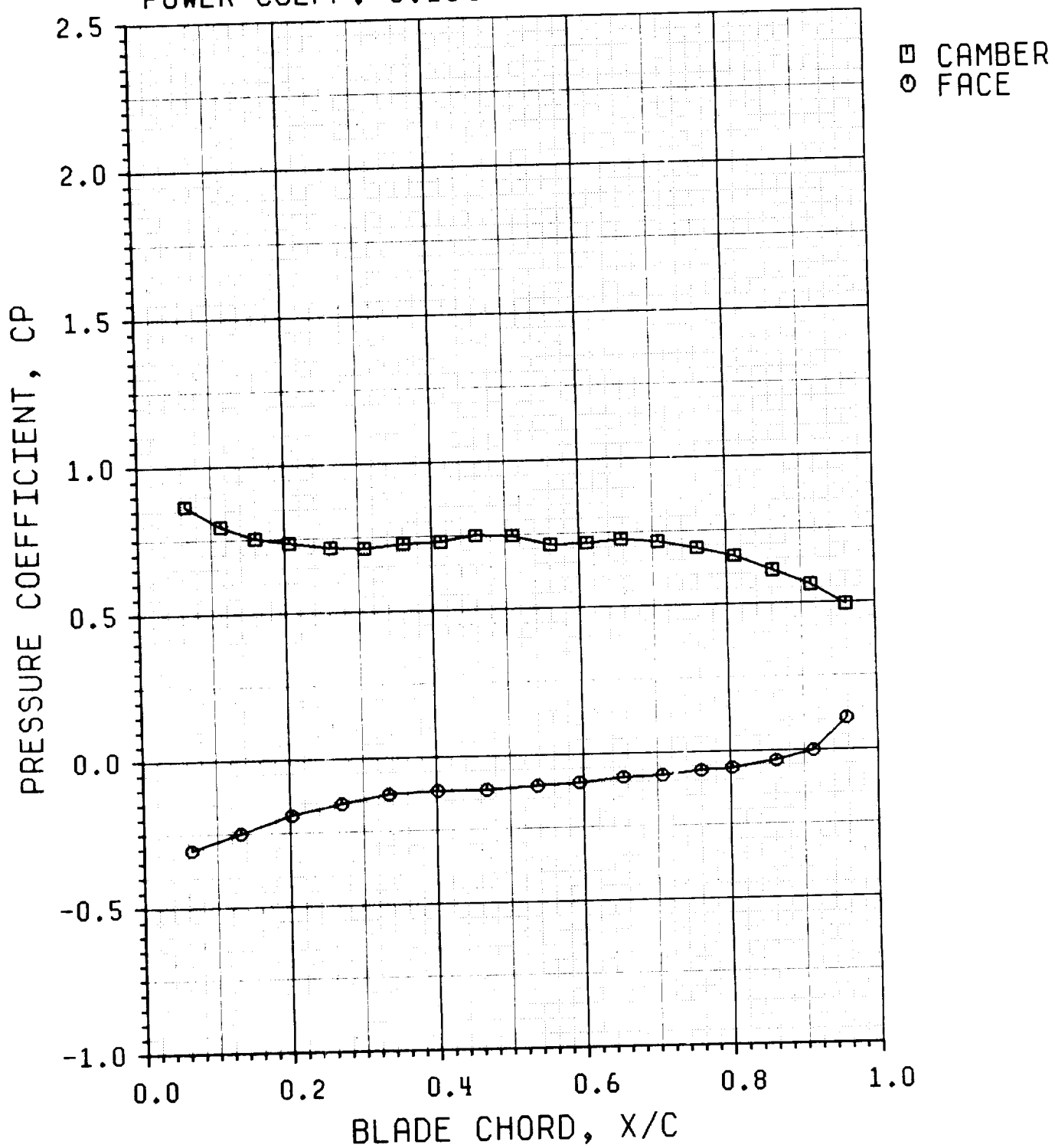
TUNNEL STATIC PRESSURE, PO: 88840.0 PA, 12.885 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	80962.7	11.742	15440.5	2.289	-0.510
0.123	80750.2	11.711	15468.4	2.248	-0.523
0.179	81835.9	11.796	15489.8	2.247	-0.484
0.228	81761.8	11.858	15506.2	2.249	-0.457
0.267	82046.5	11.899	15521.7	2.251	-0.438
0.309	82250.9	11.929	15529.7	2.252	-0.424
0.353	82438.9	11.956	15546.5	2.255	-0.412
0.399	82562.6	11.974	15564.7	2.257	-0.403
0.444	82548.2	11.972	15584.6	2.260	-0.404
0.487	82626.4	11.984	15606.9	2.264	-0.398
0.533	82658.3	11.988	15632.3	2.267	-0.395
0.581	82655.9	11.988	15656.2	2.271	-0.395
0.632	82687.4	11.992	15681.3	2.274	-0.392
0.678	82709.1	11.996	15704.6	2.278	-0.390
0.717	82807.1	12.010	15721.5	2.280	-0.384
0.774	82923.5	12.027	15753.1	2.285	-0.375
0.822	83129.1	12.056	15784.3	2.289	-0.362
0.875	83371.8	12.092	15814.8	2.294	-0.346
0.928	83638.8	12.130	15862.2	2.301	-0.328
0.974	83968.6	12.178	15888.6	2.304	-0.307
FACE					
0.058	94476.6	18.702	15488.4	2.239	0.365
0.116	93692.6	18.588	15457.1	2.242	0.314
0.185	92633.3	18.435	15471.8	2.244	0.245
0.236	92214.1	18.374	15494.8	2.247	0.218
0.307	91785.5	18.312	15516.8	2.250	0.190
0.365	91323.4	18.245	15538.5	2.254	0.160
0.425	90946.9	18.190	15563.6	2.257	0.135
0.507	90822.0	18.172	15594.1	2.262	0.127
0.578	90607.6	18.141	15633.7	2.267	0.113
0.644	90455.2	18.119	15669.6	2.273	0.103
0.702	90310.7	18.098	15697.3	2.277	0.094
0.758	89804.7	18.025	15733.8	2.282	0.061
0.808	89746.2	18.016	15765.5	2.287	0.057
0.861	89292.6	12.950	15797.5	2.291	0.029
0.914	88676.6	12.861	15832.0	2.296	-0.010
0.963	86913.9	12.605	15866.0	2.301	-0.121

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.03    ADV. RATIO: 0.184

POWER COEFF: 0.154    RECORD NO: 119.0



**LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST**

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**OPERATING PARAMETERS FOR RECORD NUMBER: 119.0**

**WIND TUNNEL:**

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STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	88880.0 PA	12.891 PSI
AIR DENSITY:	1.07502 KG/M3	0.067114 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.08	
INFLOW VELOCITY:	10.21 M/S	33.49 FT/S

**PROPFAN:**

---

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1202.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.154	
BLADE ANGLE (@ X=41" STA):	19.9 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3836 M	54.47 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.506	

RUN DATE:	03-11-1987
RUN TIME:	16:50:36



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 119.0

RADIAL STATION: 12

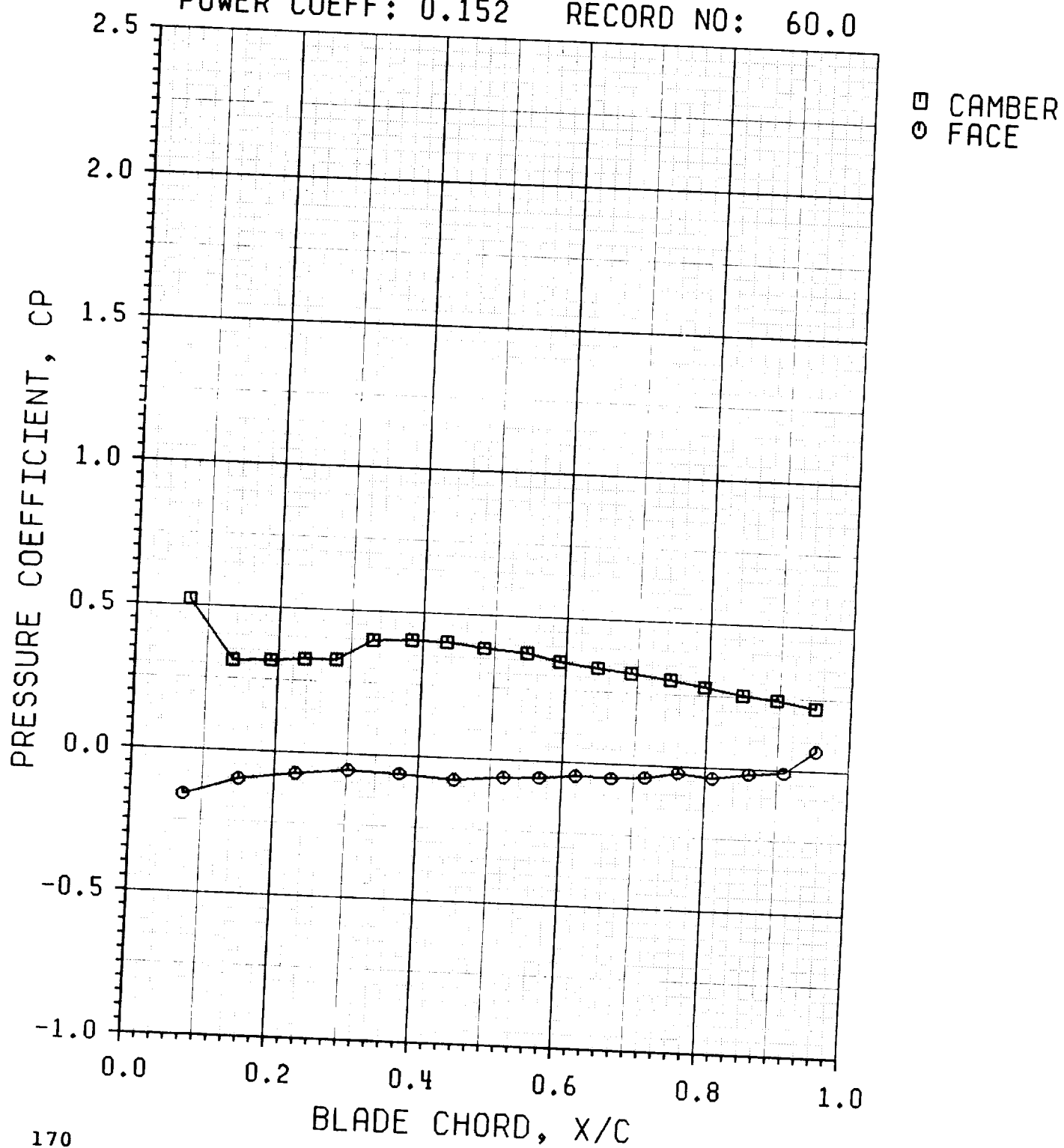
TUNNEL STATIC PRESSURE, PO: 88880.0 PA, 12.891 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	75269.6	10.917	15721.4	2.280	-0.866
0.118	76872.4	11.076	15741.4	2.283	-0.795
0.160	77019.7	11.170	15757.6	2.285	-0.753
0.206	77298.2	11.210	15769.3	2.287	-0.735
0.262	77563.6	11.249	15786.8	2.290	-0.717
0.308	77621.9	11.258	15797.0	2.291	-0.713
0.361	77397.7	11.225	15823.1	2.295	-0.726
0.412	77326.1	11.215	15835.5	2.297	-0.730
0.460	77008.3	11.169	15848.9	2.299	-0.749
0.510	77031.5	11.172	15875.6	2.302	-0.746
0.561	77540.9	11.246	15902.3	2.306	-0.713
0.610	77474.8	11.236	15930.5	2.310	-0.716
0.657	77298.5	11.211	15945.8	2.313	-0.726
0.707	77467.6	11.235	15969.5	2.316	-0.715
0.760	77826.0	11.287	15992.7	2.319	-0.691
0.811	78294.4	11.355	16018.8	2.323	-0.661
0.862	79085.4	11.470	16045.3	2.327	-0.610
0.913	79882.1	11.586	16077.8	2.332	-0.560
0.960	80954.6	11.741	16104.0	2.336	-0.492
FACE					
0.065	93694.9	13.589	15717.1	2.279	0.306
0.132	92813.9	13.461	15739.7	2.283	0.250
0.202	91893.0	13.327	15755.9	2.285	0.191
0.270	91323.7	13.245	15778.4	2.288	0.155
0.335	90875.9	13.180	15799.1	2.291	0.126
0.401	90750.6	13.162	15821.5	2.295	0.118
0.468	90751.8	13.162	15846.9	2.298	0.118
0.537	90595.8	13.139	15871.6	2.302	0.108
0.594	90446.5	13.118	15903.0	2.306	0.099
0.654	90216.2	13.084	15927.9	2.310	0.084
0.707	90149.4	13.075	15959.5	2.315	0.080
0.760	89934.2	13.043	15983.2	2.318	0.066
0.802	89827.7	13.028	16000.2	2.321	0.059
0.862	89452.4	12.974	16037.2	2.326	0.036
0.912	88913.7	12.895	16059.7	2.329	0.002
0.958	87176.5	12.643	16089.7	2.334	-0.106

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13 MACH NO: 0.02 ADV. RATIO: 0.122

POWER COEFF: 0.152 RECORD NO: 60.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 60.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	88590.0 PA	12.848 PSI
AIR DENSITY:	1.07152 KG/M3	0.066895 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.80 M/S	22.33 FT/S

PROPFAN:

RADIAL STATION:	18	
ROTOR SPEED (RPM):	1209.0	
ADVANCE RATIO:	0.122	
POWER COEFFICIENT:	0.152	
BLADE ANGLE (@ X=41" STA):	19.3 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3837 M	54.48 IN.
RADIUS RATIO (@ MID CHORD):	0.996	
REL MACH NO. (@ MID CHORD):	0.513	

RUN DATE:	03-09-1987
RUN TIME:	16:11:17

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 60.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 88590.0 PA, 12.848 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	80160.4	11.626	16198.1	2.849	-0.521
0.136	83522.1	12.113	16212.6	2.851	-0.813
0.189	83464.8	12.105	16218.2	2.851	-0.816
0.236	83389.6	12.087	16229.7	2.854	-0.824
0.280	83287.9	12.079	16245.2	2.856	-0.826
0.330	82148.6	11.914	16252.4	2.857	-0.897
0.384	82088.0	11.898	16272.5	2.860	-0.403
0.433	82070.6	11.908	16289.9	2.863	-0.400
0.485	82829.4	11.940	16800.9	2.864	-0.884
0.545	82524.4	11.969	16823.5	2.867	-0.872
0.591	82898.4	12.028	16842.2	2.870	-0.848
0.644	83178.4	12.064	16858.0	2.872	-0.881
0.691	83398.1	12.095	16374.6	2.875	-0.317
0.746	83670.9	12.135	16396.6	2.878	-0.800
0.794	84001.9	12.183	16422.1	2.882	-0.279
0.848	84395.7	12.240	16443.6	2.885	-0.255
0.896	84598.6	12.270	16464.9	2.888	-0.242
0.950	84997.5	12.327	16491.2	2.892	-0.218
FACE					
0.074	91169.6	18.223	16179.7	2.347	0.159
0.150	90210.6	18.083	16196.7	2.349	0.100
0.229	89808.7	18.025	16224.7	2.353	0.075
0.302	89589.0	12.986	16286.4	2.355	0.058
0.374	89629.2	12.999	16260.1	2.358	0.064
0.450	89843.8	13.030	16283.9	2.362	0.077
0.519	89621.6	12.998	16301.8	2.364	0.063
0.569	89549.1	12.988	16320.2	2.367	0.059
0.619	89862.6	12.960	16340.6	2.370	0.047
0.669	89425.9	12.970	16362.3	2.373	0.051
0.716	89812.8	12.953	16381.3	2.376	0.044
0.762	88989.7	12.906	16398.6	2.378	0.024
0.810	89196.2	12.936	16414.3	2.381	0.037
0.861	88905.7	12.894	16430.6	2.383	0.019
0.910	88765.6	12.874	16464.7	2.388	0.011
0.953	87491.2	12.689	16477.1	2.390	-0.067

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B4

(B4.1 through B4.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_{\infty} = 0.030 \pm 0.015$

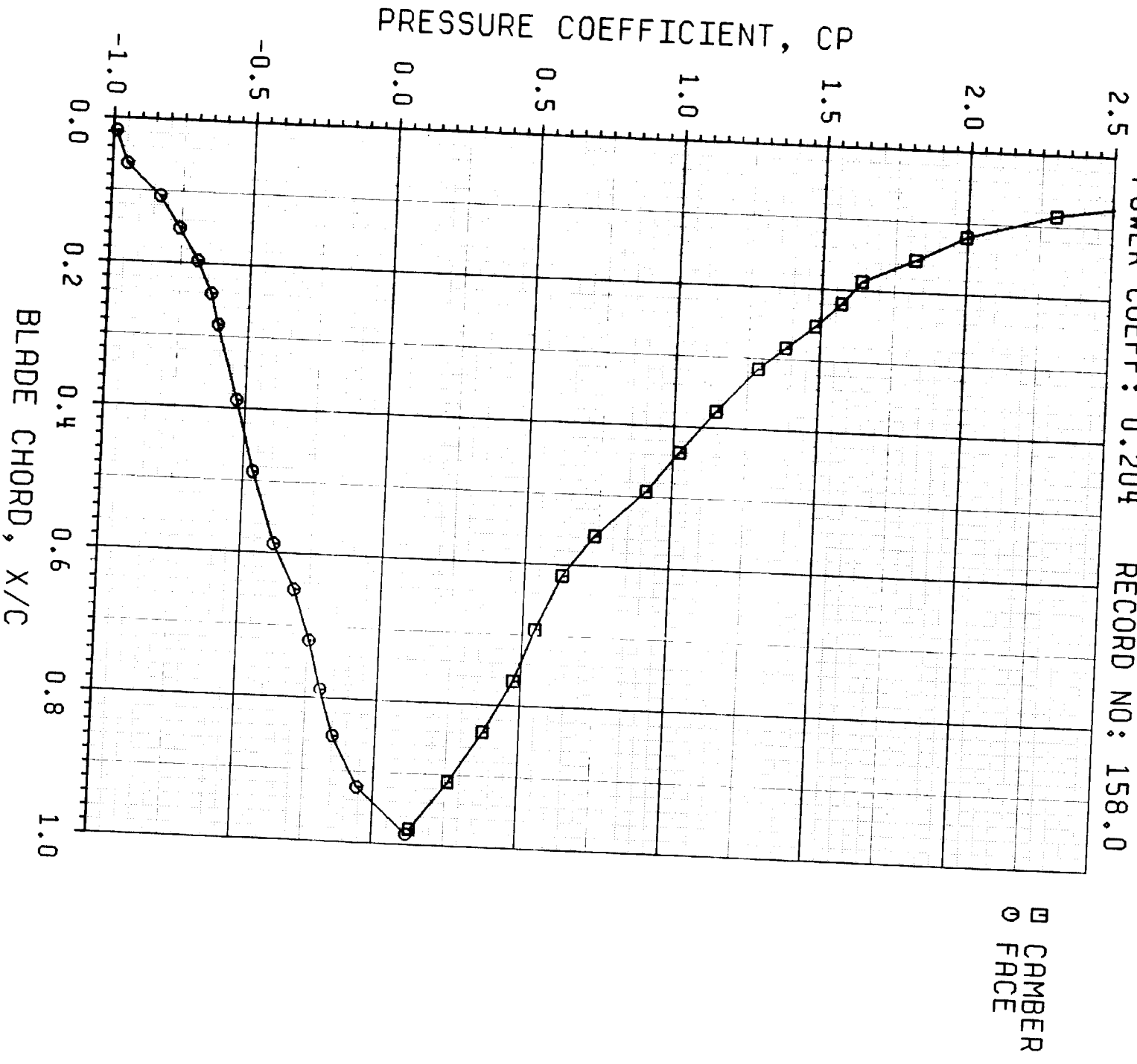
Advance Ratio,  $J = 0.185 \pm 0.061$

Power Coefficient,  $CP = 0.205 \pm 0.003$

Blade Angle,  $\beta = 22.2 \pm 0.6^{\circ}$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1    MACH NO: 0.03    FDV. RATIO: 0.185  
POWER COEFF: 0.204    RECORD NO: 158.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 158.0

## WIND TUNNEL:

STATIC TEMPERATURE:	291.0 K	64.1 F
STATIC PRESSURE:	89110.0 PA	12.924 PSI
AIR DENSITY:	1.0667 KG/M3	0.06659 LBF/FT3
SPEED OF SOUND:	341.99 M/S	1122.05 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.26 M/S	33.66 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1201.0	
ADVANCE RATIO:	0.185	
POWER COEFFICIENT:	0.204	
BLADE ANGLE (@ X=41" STA):	22.1 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3832 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.329	
REL MACH NO. (@ MID CHORD):	0.170	

RUN DATE:	03-12-1987
RUN TIME:	16:34:52

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 158.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, PO: 89110.0 PA, 12.924 PSI

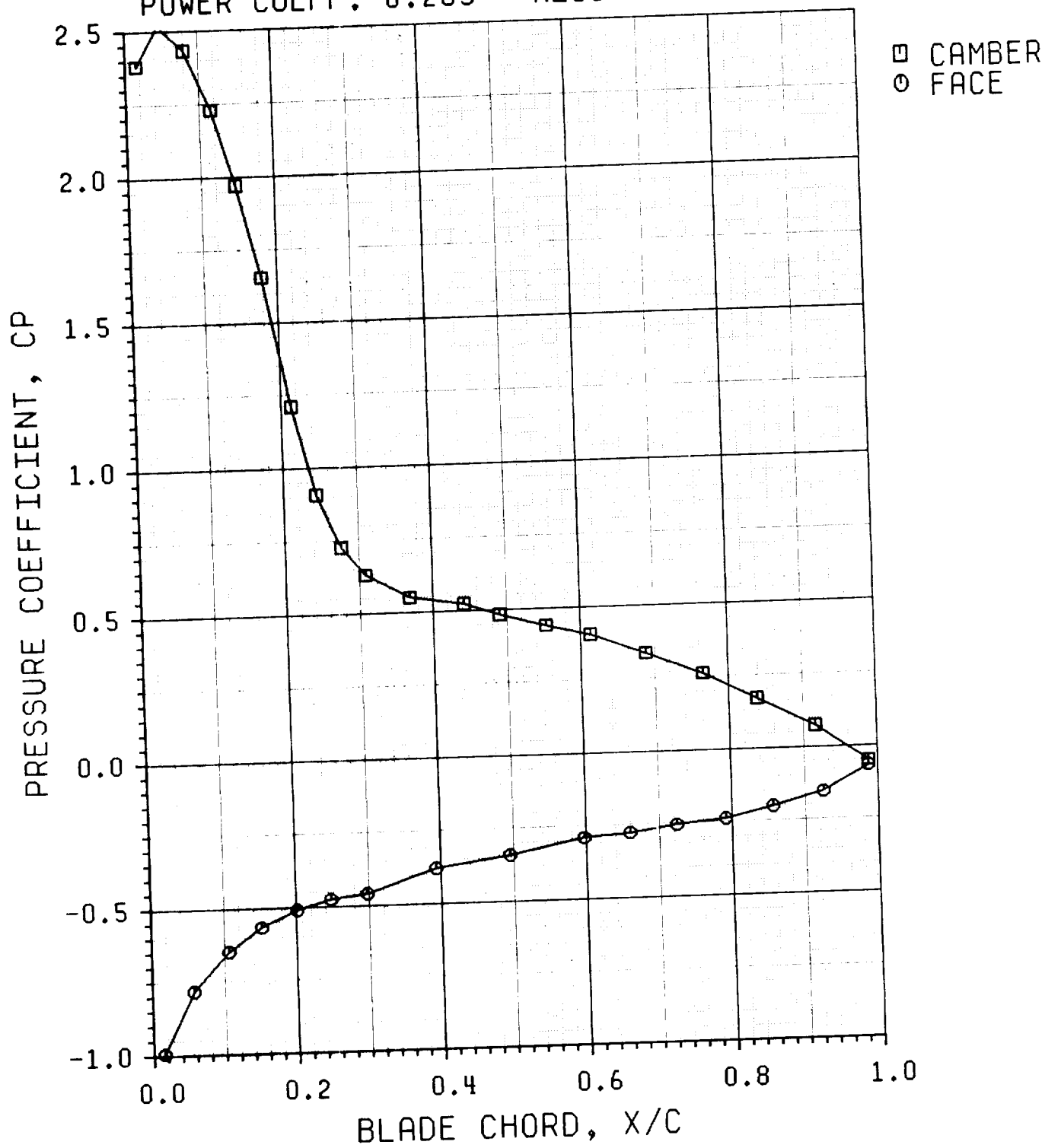
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	80881.4	11.730	1477.8	0.214	-5.570
0.053	84955.8	12.321	1459.5	0.212	-2.846
0.085	85782.1	12.441	1444.7	0.210	-2.304
0.119	86248.9	12.509	1434.9	0.208	-1.994
0.154	86514.0	12.547	1426.7	0.207	-1.820
0.187	86777.9	12.586	1424.5	0.207	-1.687
0.219	86875.7	12.600	1424.2	0.207	-1.569
0.252	87002.6	12.618	1425.1	0.207	-1.479
0.284	87139.5	12.638	1429.1	0.207	-1.379
0.315	87260.3	12.656	1488.1	0.209	-1.286
0.377	87442.5	12.682	1459.6	0.212	-1.142
0.436	87587.1	12.703	1492.6	0.216	-1.020
0.492	87784.2	12.724	1514.0	0.220	-0.909
0.558	87947.3	12.755	1580.7	0.229	-0.736
0.615	88079.2	12.774	1636.2	0.237	-0.630
0.692	88178.9	12.789	1715.7	0.249	-0.543
0.765	88254.3	12.800	1813.1	0.263	-0.472
0.838	88394.7	12.820	1912.2	0.277	-0.374
0.910	88585.2	12.848	2026.0	0.294	-0.259
0.978	88833.7	12.884	2141.0	0.311	-0.129
FACE					
0.018	90588.9	13.138	1495.4	0.217	0.989
0.068	90526.1	13.129	1495.6	0.217	0.947
0.107	90843.0	13.103	1487.8	0.216	0.829
0.151	90229.6	13.086	1479.6	0.215	0.757
0.196	90129.1	13.072	1477.2	0.214	0.690
0.241	90051.6	13.060	1476.8	0.214	0.638
0.284	90010.9	13.055	1478.2	0.214	0.609
0.388	89910.3	13.040	1503.4	0.218	0.532
0.487	89833.5	13.029	1552.8	0.225	0.466
0.587	89729.2	13.014	1622.9	0.235	0.382
0.650	89620.1	12.998	1675.0	0.243	0.305
0.720	89588.2	12.986	1747.2	0.258	0.245
0.788	89475.1	12.977	1831.3	0.266	0.199
0.852	89395.2	12.965	1920.0	0.278	0.149
0.922	89228.0	12.941	2027.4	0.294	0.058
0.985	88858.4	12.887	2187.5	0.310	-0.118

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.04    ADV. RATIO: 0.243

POWER COEFF: 0.203    RECORD NO: 210.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 210.0

WIND TUNNEL:

STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	88680.0 PA	12.861 PSI
AIR DENSITY:	1.0877 KG/M3	0.06791 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.04	
INFLOW VELOCITY:	13.51 M/S	44.34 FT/S

PROPFAN:

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1204.0	
ADVANCE RATIO:	0.243	
POWER COEFFICIENT:	0.203	
BLADE ANGLE (@ X=41" STA):	21.9 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3832 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.464	
REL MACH NO. (@ MID CHORD):	0.243	

RUN DATE:	03-13-1987
RUN TIME:	22:41:03

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 210.0

RADIAL STATION: 2

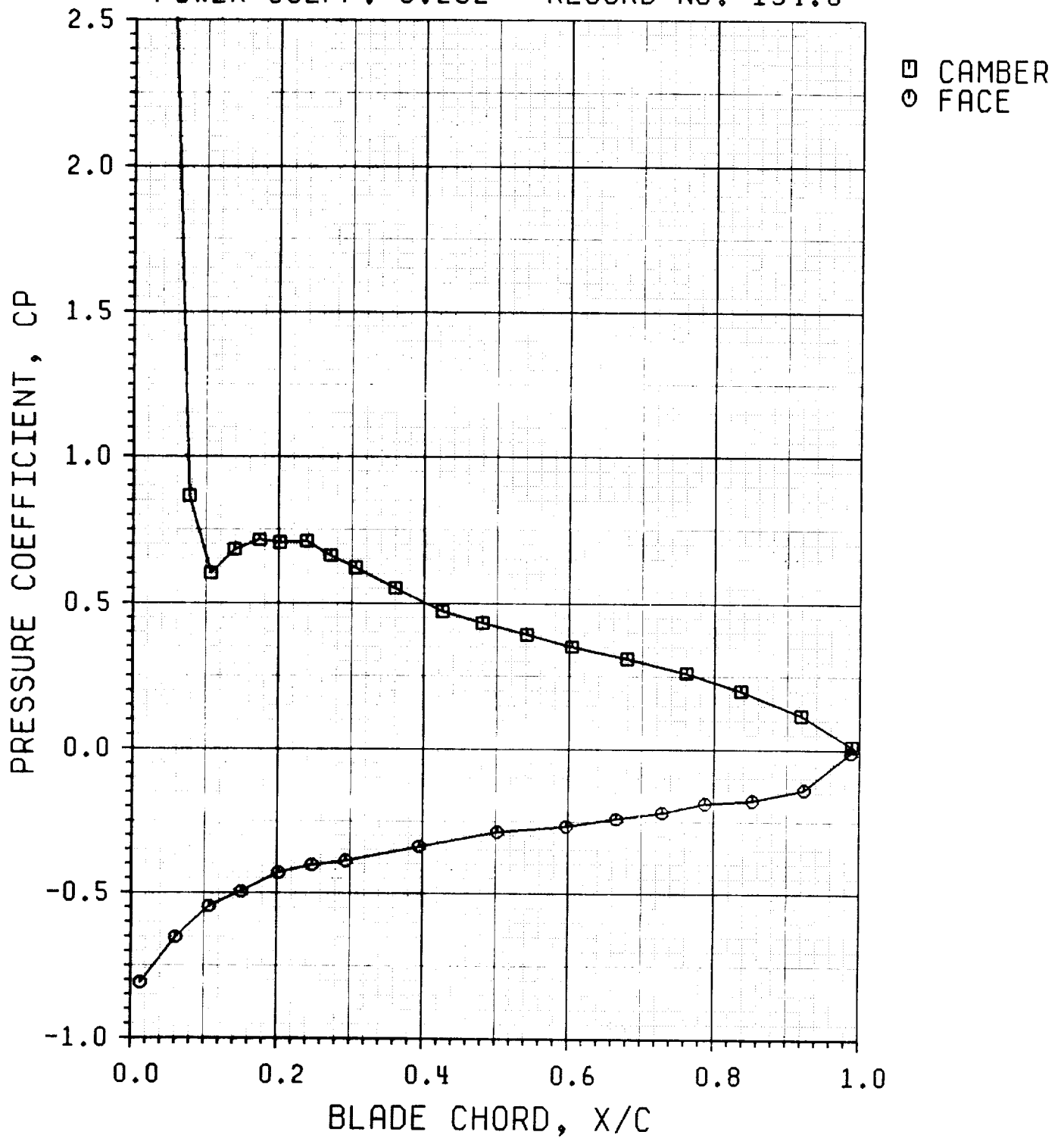
TUNNEL STATIC PRESSURE, PO: 88680.0 PA, 12.861 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	80506.9	11.676	3482.0	0.498	-2.381
0.046	80142.7	11.623	3393.3	0.492	-2.516
0.080	80527.2	11.679	3351.8	0.486	-2.432
0.115	81283.6	11.789	3318.6	0.481	-2.229
0.146	82194.9	11.921	3291.3	0.477	-1.970
0.178	83815.2	12.083	3243.6	0.470	-1.654
0.213	84757.3	12.293	3242.6	0.470	-1.210
0.244	85749.7	12.437	3227.3	0.468	-0.908
0.276	86849.9	12.524	3212.9	0.466	-0.725
0.308	86664.7	12.569	3206.1	0.465	-0.629
0.368	86923.6	12.607	3200.7	0.464	-0.549
0.442	87003.9	12.618	3202.5	0.464	-0.523
0.490	87122.8	12.636	3229.0	0.468	-0.482
0.553	87242.4	12.653	3263.4	0.478	-0.441
0.613	87339.1	12.667	3310.9	0.480	-0.405
0.688	87541.1	12.696	3385.2	0.491	-0.336
0.765	87771.2	12.730	3480.4	0.505	-0.261
0.838	88069.1	12.773	3592.9	0.521	-0.170
0.916	88409.2	12.822	3732.7	0.541	-0.073
0.987	88879.1	12.890	3871.9	0.562	0.051
FACE					
0.015	92109.7	13.359	3450.7	0.500	0.994
0.057	91344.2	13.248	3402.7	0.494	0.783
0.106	90851.5	13.176	3354.9	0.487	0.647
0.152	90557.7	13.134	3319.3	0.481	0.566
0.201	90355.0	13.104	3281.8	0.476	0.510
0.248	90230.6	13.086	3257.8	0.472	0.476
0.298	90168.2	13.077	3238.7	0.470	0.460
0.393	89907.9	13.040	3228.5	0.468	0.380
0.495	89795.9	13.023	3251.9	0.472	0.343
0.597	89648.4	13.001	3313.1	0.481	0.291
0.660	89618.5	12.998	3366.3	0.488	0.279
0.724	89559.8	12.989	3435.7	0.498	0.256
0.791	89525.3	12.984	3522.1	0.511	0.240
0.856	89413.2	12.968	3624.2	0.526	0.202
0.925	89264.5	12.946	3747.4	0.544	0.156
0.987	88946.4	12.900	3874.6	0.562	0.069

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.03    ADV. RATIO: 0.184

POWER COEFF: 0.202    RECORD NO: 134.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 184.0

## WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	89140.0 PA	12.928 PSI
AIR DENSITY:	1.0782 KG/M3	0.06731 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.08	
INFLOW VELOCITY:	10.21 M/S	33.49 FT/S

## PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1203.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.202	
BLADE ANGLE (@ X=41" STA):	22.8 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3830 M	54.45 IN.
RADIUS RATIO (@ MID CHORD):	0.583	
REL MACH NO. (@ MID CHORD):	0.300	

RUN DATE:	03-11-1987
RUN TIME:	20:39:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 134.0

RADIAL STATION: 3

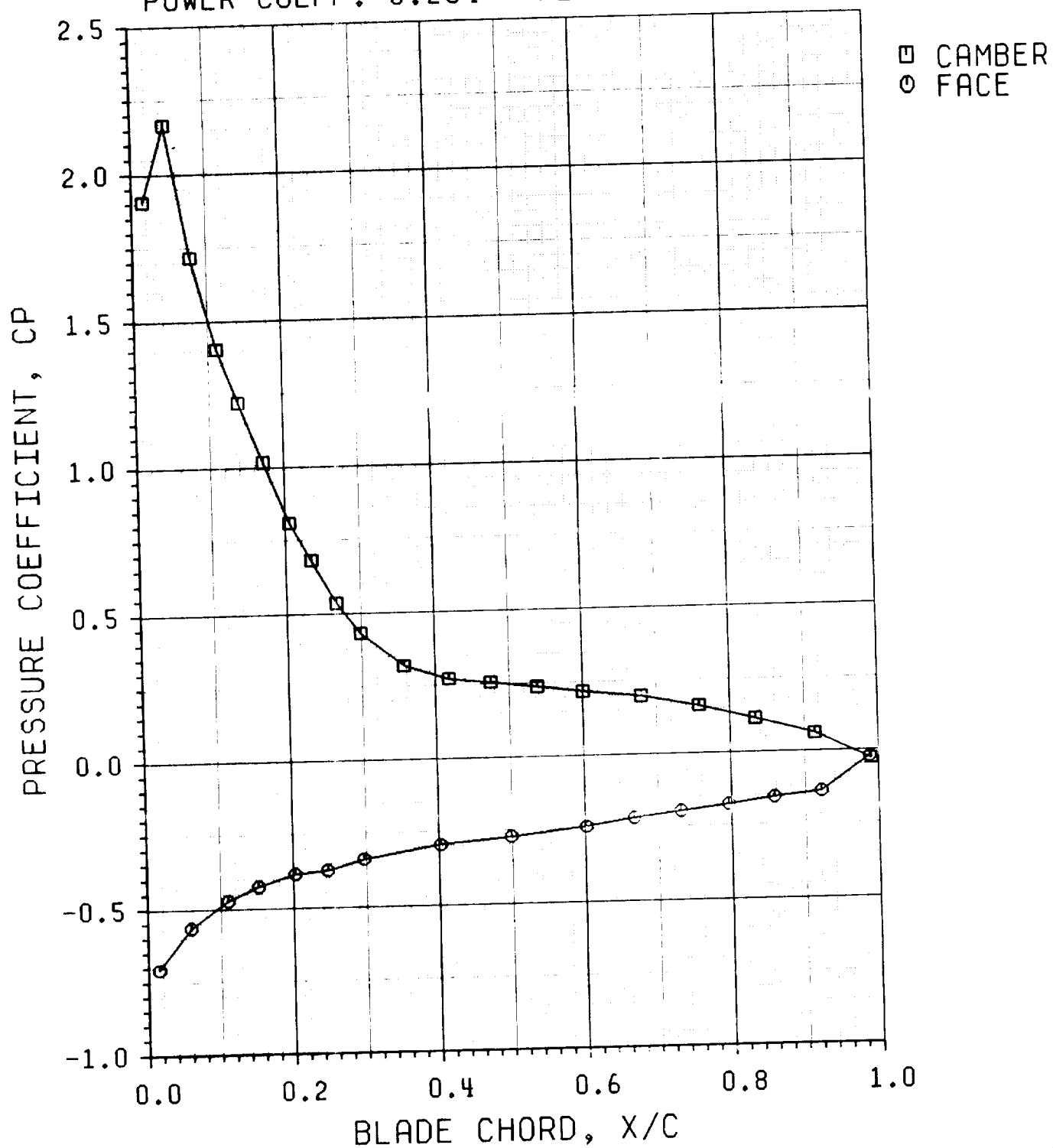
TUNNEL STATIC PRESSURE, PO: 89140.0 PA, 12.928 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	73518.4	10.663	5435.0	0.788	-2.874
0.046	71347.0	10.348	5384.8	0.781	-3.304
0.077	84525.9	12.259	5334.8	0.774	-0.865
0.107	85958.1	12.467	5294.8	0.768	-0.601
0.139	85560.2	12.409	5253.5	0.762	-0.681
0.178	86418.6	12.388	5212.5	0.756	-0.714
0.201	85482.5	12.898	5187.7	0.752	-0.705
0.238	85481.5	12.898	5156.2	0.748	-0.710
0.271	85745.8	12.436	5134.9	0.745	-0.661
0.305	85965.1	12.468	5120.1	0.743	-0.620
0.360	86332.4	12.521	5100.0	0.740	-0.551
0.425	86730.6	12.579	5096.9	0.739	-0.473
0.480	86932.6	12.608	5101.9	0.740	-0.433
0.541	87119.8	12.635	5136.2	0.745	-0.893
0.603	87324.0	12.665	5173.8	0.750	-0.851
0.679	87512.7	12.692	5254.6	0.762	-0.810
0.761	87739.9	12.725	5359.2	0.777	-0.261
0.836	88038.4	12.763	5483.7	0.795	-0.201
0.919	88475.9	12.832	5644.1	0.819	-0.118
0.989	89081.6	12.920	5802.2	0.842	-0.010
FACE					
0.013	93548.5	13.563	5448.3	0.790	0.809
0.061	92640.1	13.436	5377.7	0.780	0.651
0.107	92039.2	13.349	5313.3	0.771	0.546
0.151	91750.0	13.307	5259.7	0.763	0.496
0.202	91383.9	13.254	5209.3	0.756	0.431
0.248	91227.1	13.231	5170.2	0.750	0.404
0.294	91147.0	13.219	5141.8	0.746	0.390
0.395	90873.6	13.180	5110.0	0.741	0.339
0.502	90614.9	13.142	5128.3	0.744	0.288
0.597	90523.8	13.129	5175.1	0.751	0.267
0.666	90404.9	13.112	5245.2	0.761	0.241
0.729	90301.6	13.097	5309.1	0.770	0.219
0.788	90146.3	13.074	5394.3	0.782	0.187
0.853	90122.1	13.071	5508.0	0.799	0.178
0.924	89931.4	13.043	5645.9	0.819	0.140
0.988	89206.4	12.938	5794.5	0.840	0.011

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4 MACH NO: 0.04 ADV. RATIO: 0.246

POWER COEFF: 0.204 RECORD NO: 198.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST ---

OPERATING PARAMETERS FOR RECORD NUMBER: 198.0

## WIND TUNNEL:

STATIC TEMPERATURE:	292.0 K	65.9 F
STATIC PRESSURE:	88670.0 PA	12.860 PSI
AIR DENSITY:	1.0578 KG/M3	0.06604 LBF/FT3
SPEED OF SOUND:	342.57 M/S	1123.98 FT/S
INFLOW MACH NUMBER:	0.04	
INFLOW VELOCITY:	18.70 M/S	44.96 FT/S

## PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1207.0	
ADVANCE RATIO:	0.246	
POWER COEFFICIENT:	0.204	
BLADE ANGLE (@ X=41" STA):	21.6 DEG.	
BLADE CHORD:	0.5676 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3883 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.677	
REL MACH NO. (@ MID CHORD):	0.848	

RUN DATE:	03-13-1987
RUN TIME:	17:41:48



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 198.0

RADIAL STATION: 4

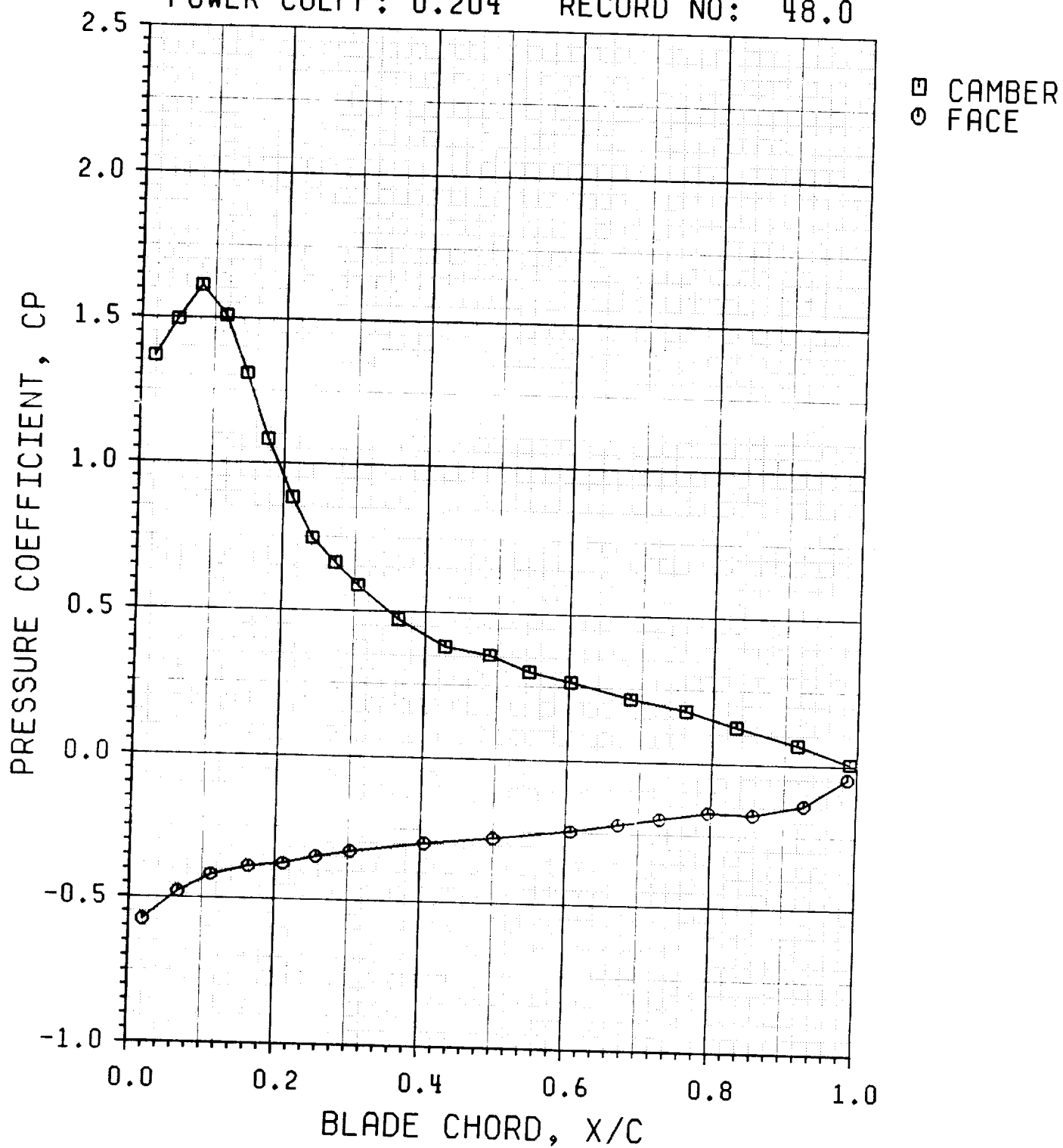
TUNNEL STATIC PRESSURE, PO: 88670.0 PA, 12.860 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	74774.8	10.845	7290.1	1.057	-1.906
0.045	72978.7	10.584	7242.9	1.050	-2.166
0.078	76333.4	11.071	7189.6	1.043	-1.716
0.111	78637.6	11.405	7143.4	1.036	-1.404
0.139	79994.9	11.602	7108.8	1.031	-1.220
0.171	81482.2	11.818	7070.9	1.026	-1.017
0.205	82973.5	12.034	7038.4	1.021	-0.809
0.234	83895.9	12.168	7012.5	1.017	-0.681
0.267	84928.6	12.317	6993.8	1.014	-0.535
0.299	85661.9	12.424	6973.8	1.011	-0.431
0.357	86449.6	12.538	6955.8	1.009	-0.319
0.418	86788.9	12.587	6952.4	1.008	-0.271
0.475	86889.8	12.602	6964.0	1.010	-0.256
0.538	87010.4	12.619	6995.9	1.015	-0.237
0.600	87135.1	12.637	7039.3	1.021	-0.218
0.679	87258.4	12.655	7126.8	1.034	-0.198
0.758	87503.8	12.691	7239.5	1.050	-0.161
0.834	87835.0	12.739	7377.7	1.070	-0.113
0.914	88224.8	12.795	7551.5	1.095	-0.059
0.990	88898.2	12.893	7737.2	1.122	0.029
FACE					
0.015	93830.7	13.609	7307.4	1.060	0.706
0.059	92759.6	13.453	7241.5	1.050	0.565
0.110	92062.5	13.352	7167.5	1.040	0.473
0.152	91695.6	13.299	7116.1	1.032	0.425
0.202	91393.6	13.255	7069.3	1.025	0.385
0.247	91302.5	13.242	7031.5	1.020	0.374
0.297	91041.5	13.204	7002.4	1.016	0.339
0.402	90731.8	13.159	6976.5	1.012	0.296
0.499	90590.2	13.139	7005.6	1.016	0.274
0.602	90413.1	13.113	7073.2	1.026	0.246
0.667	90235.9	13.087	7126.4	1.034	0.220
0.731	90112.3	13.069	7217.7	1.047	0.200
0.796	89988.6	13.051	7324.1	1.062	0.180
0.858	89847.7	13.031	7436.1	1.078	0.158
0.922	89732.3	13.014	7573.9	1.098	0.140
0.988	88844.3	12.885	7735.9	1.122	0.023

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5    MACH NO: 0.03    ADV. RATIO: 0.184

POWER COEFF: 0.204    RECORD NO: 48.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 48.0

## WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	89240.0 PA	12.943 PSI
AIR DENSITY:	1.0831 KG/M3	0.06762 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.19 M/S	33.43 FT/S

## PROPFAN:

RADIAL STATION:	5	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.204	
BLADE ANGLE (@ X=41" STA):	21.6 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3833 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.744	
REL MACH NO. (@ MID CHORD):	0.382	

RUN DATE:	03-06-1987
RUN TIME:	16:38:47

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 48.0

RADIAL STATION: 5

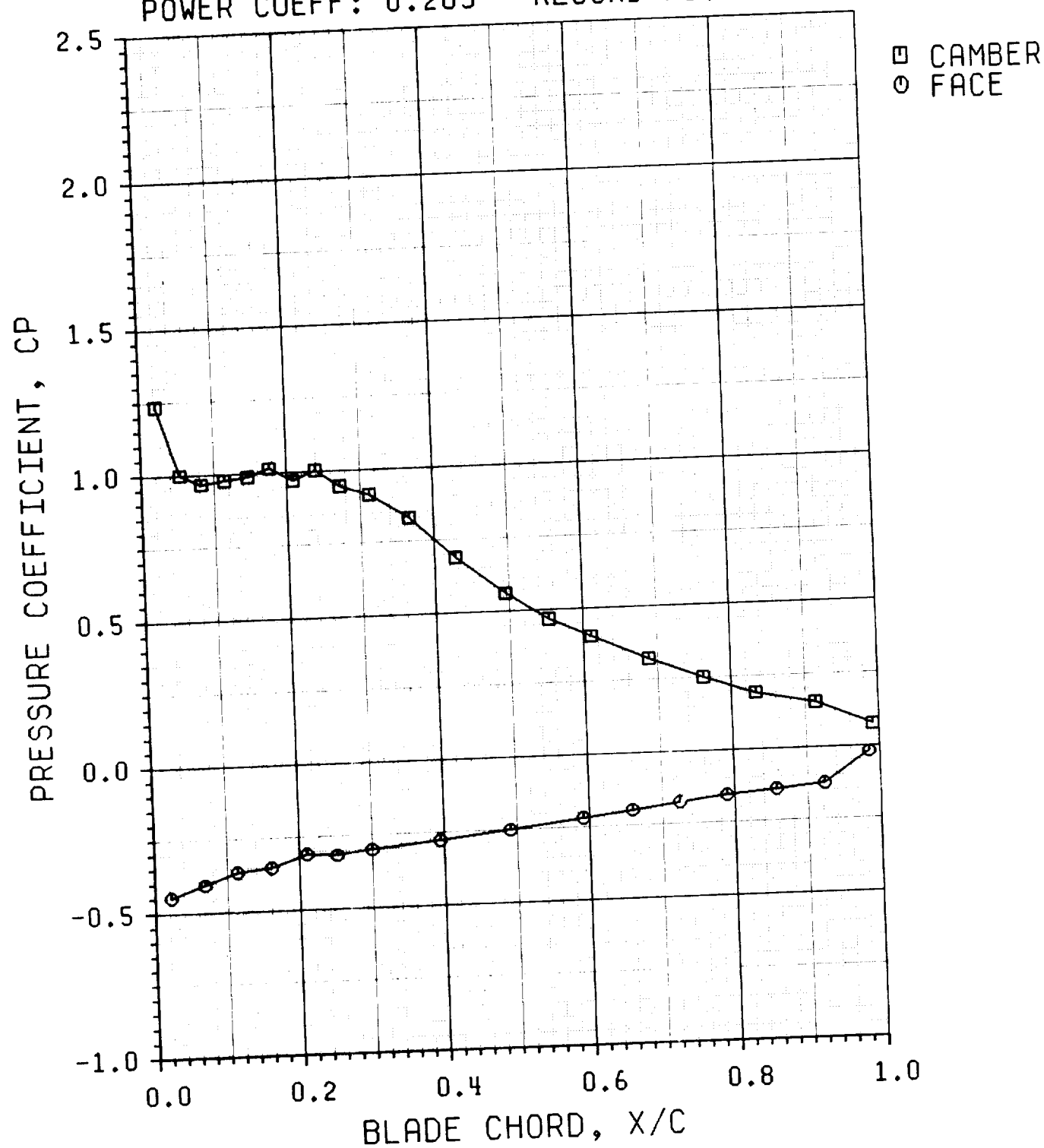
TUNNEL STATIC PRESSURE, PO: 89240.0 PA, 12.943 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	77142.4	11.188	8854.8	1.284	-1.366
0.050	76076.4	11.034	8809.4	1.278	-1.494
0.082	75182.9	10.897	8768.7	1.271	-1.610
0.116	76087.5	11.035	8724.8	1.265	-1.508
0.146	77867.0	11.298	8691.8	1.261	-1.309
0.177	79862.0	11.588	8662.8	1.256	-1.083
0.212	81621.8	11.838	8636.0	1.252	-0.882
0.241	82811.3	12.010	8617.2	1.250	-0.746
0.273	83539.3	12.116	8600.4	1.247	-0.663
0.305	84210.2	12.218	8587.7	1.245	-0.586
0.362	85188.2	12.355	8579.0	1.244	-0.472
0.427	85952.7	12.466	8585.2	1.245	-0.388
0.489	86180.7	12.499	8601.3	1.247	-0.356
0.544	86652.7	12.567	8634.1	1.252	-0.300
0.602	86917.2	12.606	8687.5	1.260	-0.267
0.685	87362.7	12.670	8778.0	1.278	-0.214
0.762	87661.4	12.714	8888.6	1.289	-0.178
0.832	88116.1	12.780	9010.0	1.307	-0.125
0.917	88611.4	12.852	9186.6	1.382	-0.068
0.990	89187.5	12.935	9358.2	1.357	-0.006
FACE					
0.019	94360.4	13.685	8867.2	1.286	0.577
0.067	93465.6	13.556	8797.6	1.276	0.480
0.112	92901.0	13.474	8737.4	1.267	0.419
0.163	92606.9	13.481	8688.8	1.260	0.388
0.211	92495.4	13.415	8654.2	1.255	0.376
0.256	92256.1	13.380	8628.2	1.251	0.350
0.303	92082.7	13.355	8607.4	1.248	0.330
0.405	91792.6	13.313	8590.9	1.246	0.297
0.500	91614.8	13.287	8617.2	1.250	0.276
0.607	91382.6	13.253	8701.8	1.262	0.246
0.672	91167.9	13.222	8766.8	1.271	0.220
0.729	90983.5	13.196	8846.9	1.283	0.197
0.796	90790.9	13.168	8949.4	1.298	0.173
0.858	90856.7	13.177	9058.9	1.314	0.178
0.928	90549.2	13.133	9207.0	1.335	0.142
0.987	89682.9	13.007	9348.4	1.356	0.047

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.04 ADV. RATIO: 0.245

POWER COEFF: 0.203 RECORD NO: 185.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 185.0

WIND TUNNEL:

STATIC TEMPERATURE:	289.0 K	60.5 F
STATIC PRESSURE:	88820.0 PA	12.882 PSI
AIR DENSITY:	1.0706 KG/M3	0.06684 LBF/FT3
SPEED OF SOUND:	340.81 M/S	1118.19 FT/S
INFLOW MACH NUMBER:	0.04	
INFLOW VELOCITY:	13.68 M/S	44.73 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1205.0	
ADVANCE RATIO:	0.245	
POWER COEFFICIENT:	0.203	
BLADE ANGLE (@ X=41" STA):	21.6 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3833 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.807	
REL MACH NO. (@ MID CHORD):	0.415	

RUN DATE:	03-13-1987
RUN TIME:	18:47:02

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 185.0

RADIAL STATION: 6

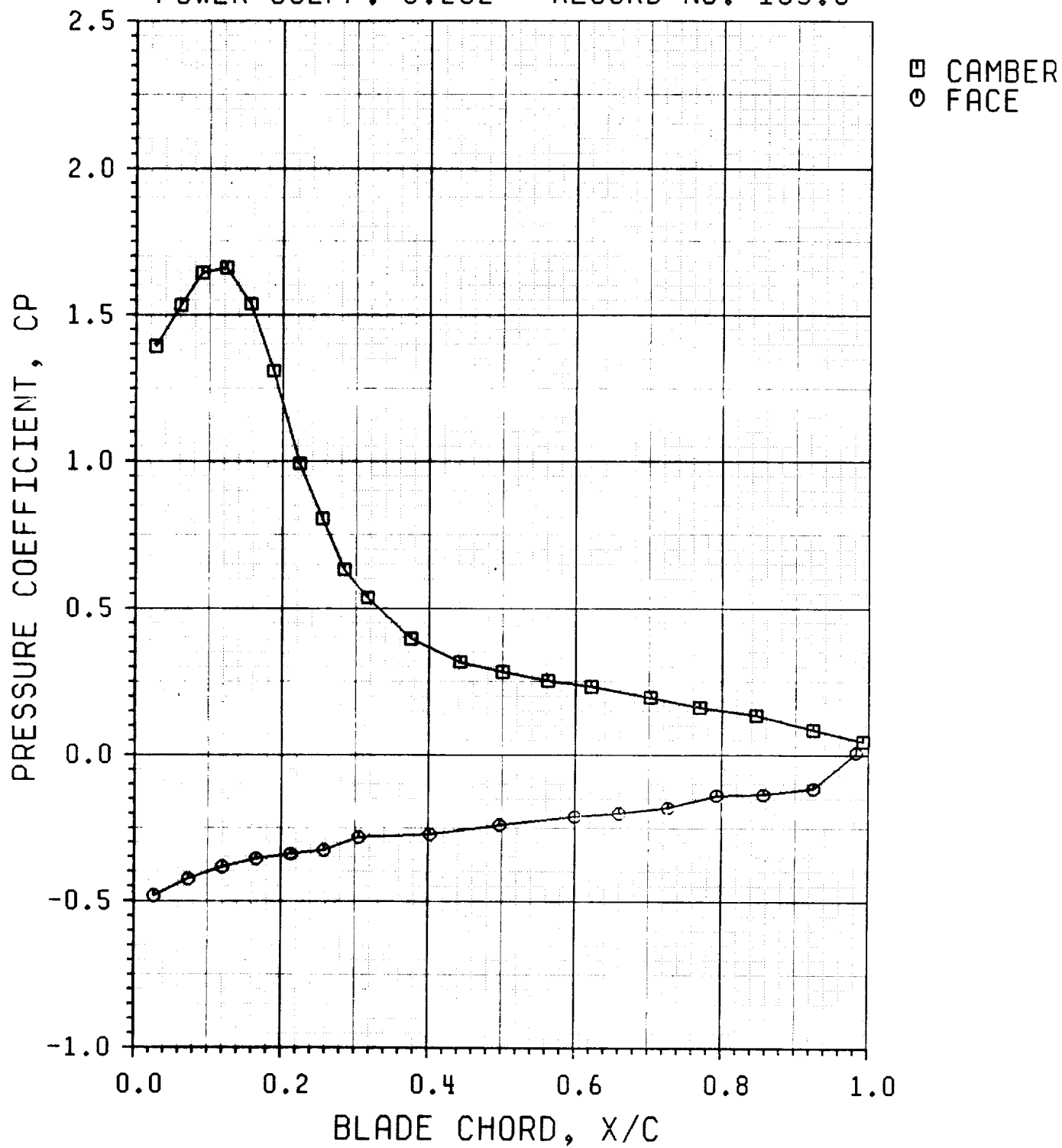
TUNNEL STATIC PRESSURE, PO: 88820.0 PA, 12.882 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	75955.2	11.016	10417.8	1.511	-1.235
0.058	78440.0	11.376	10390.1	1.507	-0.999
0.082	78806.8	11.430	10367.8	1.504	-0.966
0.114	78708.5	11.415	10352.4	1.501	-0.977
0.146	78616.1	11.402	10335.4	1.499	-0.987
0.176	78363.4	11.365	10312.1	1.496	-1.014
0.208	78840.9	11.435	10301.1	1.494	-0.969
0.239	78489.3	11.384	10297.1	1.493	-1.003
0.272	79093.9	11.471	10289.9	1.492	-0.945
0.312	79426.9	11.519	10290.3	1.492	-0.913
0.366	80284.4	11.644	10298.0	1.494	-0.829
0.428	81719.7	11.852	10319.6	1.497	-0.688
0.495	83038.2	12.048	10348.2	1.501	-0.559
0.553	83964.4	12.178	10386.6	1.506	-0.467
0.610	84600.3	12.270	10436.4	1.514	-0.404
0.688	85452.6	12.393	10525.3	1.527	-0.320
0.762	86166.1	12.497	10629.4	1.542	-0.250
0.833	86767.4	12.584	10744.4	1.558	-0.191
0.914	87159.2	12.641	10890.8	1.579	-0.153
0.991	88007.5	12.764	11047.3	1.602	-0.074
FACE					
0.022	93486.4	13.559	10423.1	1.512	0.448
0.069	93034.0	13.493	10383.1	1.506	0.406
0.114	92598.9	13.430	10351.9	1.501	0.365
0.161	92453.1	13.409	10323.3	1.497	0.352
0.210	92019.4	13.346	10308.0	1.495	0.310
0.252	92077.0	13.354	10296.4	1.493	0.316
0.300	91920.2	13.331	10286.8	1.492	0.301
0.394	91681.1	13.297	10302.3	1.494	0.278
0.491	91411.7	13.258	10341.8	1.500	0.251
0.591	91114.7	13.215	10421.4	1.511	0.220
0.659	90901.8	13.184	10485.8	1.521	0.199
0.724	90691.5	13.153	10568.3	1.533	0.177
0.789	90503.2	13.126	10657.7	1.546	0.158
0.857	90345.7	13.103	10777.8	1.563	0.142
0.923	90207.6	13.083	10902.0	1.581	0.127
0.985	89051.8	12.915	11030.9	1.600	0.021

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.02 ADV. RATIO: 0.124

POWER COEFF: 0.202 RECORD NO: 103.0





LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 103.0

WIND TUNNEL:

STATIC TEMPERATURE:	295.0 K	71.3 F
STATIC PRESSURE:	88980.0 PA	12.905 PSI
AIR DENSITY:	1.0507 KG/M3	0.06559 LBF/FT3
SPEED OF SOUND:	344.33 M/S	1129.74 FT/S
INFLOW MACH NUMBER:	0.02	
INFLOW VELOCITY:	6.89 M/S	22.59 FT/S

PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1203.0	
ADVANCE RATIO:	0.124	
POWER COEFFICIENT:	0.202	
BLADE ANGLE (@ X=41" STA):	22.4 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3831 M	54.45 IN.
RADIUS RATIO (@ MID CHORD):	0.860	
REL MACH NO. (@ MID CHORD):	0.436	

RUN DATE:	03-10-1987
RUN TIME:	18:26:10

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 103.0

RADIAL STATION: 7

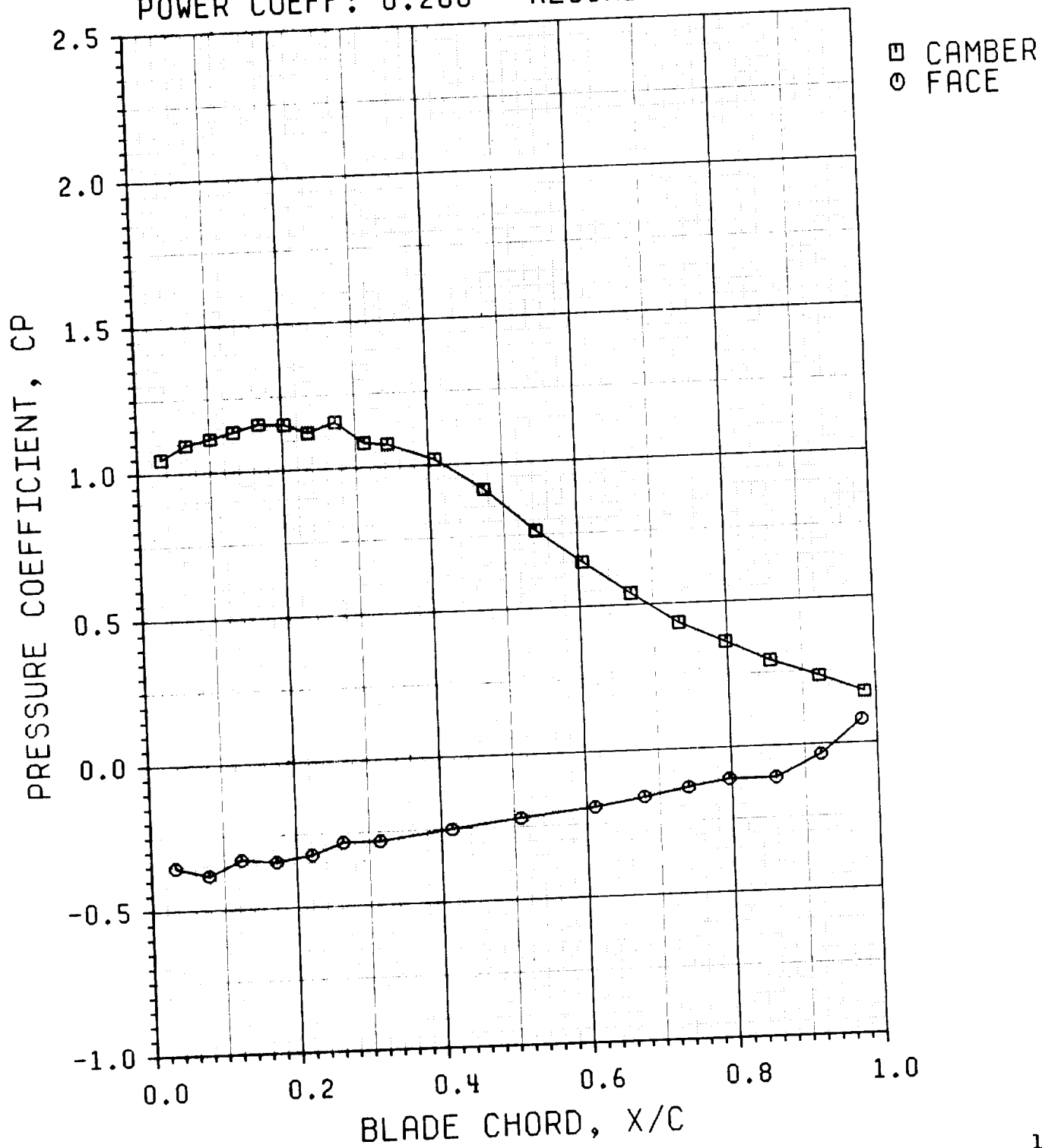
TUNNEL STATIC PRESSURE, PO: 88980.0 PA, 12.905 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	72970.5	10.583	11496.3	1.667	-1.893
0.061	71872.2	10.851	11488.9	1.666	-1.533
0.090	70121.6	10.170	11484.4	1.666	-1.642
0.128	69927.4	10.142	11476.7	1.665	-1.660
0.156	71365.1	10.350	11470.2	1.664	-1.536
0.187	78970.0	10.728	11462.6	1.662	-1.309
0.223	77613.5	11.256	11468.9	1.663	-0.991
0.254	79745.6	11.566	11476.8	1.665	-0.805
0.284	81739.2	11.855	11478.7	1.665	-0.681
0.316	82828.6	12.013	11486.4	1.666	-0.536
0.375	84436.6	12.246	11503.2	1.668	-0.395
0.442	85836.9	12.377	11534.0	1.673	-0.316
0.500	85714.2	12.431	11575.3	1.679	-0.282
0.562	86036.0	12.478	11624.0	1.686	-0.253
0.621	86256.4	12.510	11673.2	1.693	-0.233
0.702	86678.6	12.571	11767.7	1.707	-0.196
0.769	87053.8	12.626	11845.7	1.718	-0.163
0.846	87369.6	12.671	11950.9	1.733	-0.135
0.924	87955.8	12.756	12073.4	1.751	-0.085
0.992	88425.4	12.825	12188.6	1.768	-0.045
FACE					
0.027	94528.0	13.710	11491.7	1.667	0.483
0.074	93868.5	13.614	11483.7	1.666	0.426
0.120	93894.2	13.545	11465.2	1.363	0.385
0.166	93085.2	13.500	11469.6	1.663	0.358
0.213	92883.9	13.471	11457.1	1.662	0.341
0.258	92744.7	13.451	11466.4	1.663	0.328
0.305	92214.0	13.374	11476.3	1.664	0.282
0.402	92125.2	13.361	11511.8	1.670	0.273
0.497	91754.5	13.807	11570.8	1.678	0.240
0.600	91441.1	13.262	11647.7	1.689	0.211
0.660	91318.9	13.244	11704.8	1.698	0.200
0.727	91109.9	13.214	11784.8	1.709	0.181
0.793	90625.6	13.144	11873.3	1.722	0.139
0.857	90611.3	13.142	11967.7	1.736	0.136
0.925	90381.4	13.108	12075.3	1.751	0.116
0.983	88906.4	12.894	12179.4	1.766	-0.006

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8 MACH NO: 0.03 ADV. RATIO: 0.184

POWER COEFF: 0.206 RECORD NO: 171.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 171.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	89220.0 PA	12.940 PSI
AIR DENSITY:	1.0791 KG/M3	0.06787 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.21 M/S	33.49 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1205.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.206	
BLADE ANGLE (@ X=41" STA):	21.7 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3833 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.903	
REL MACH NO. (@ MID CHORD):	0.464	

RUN DATE:	03-12-1987
RUN TIME:	20:14:59

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 171.0

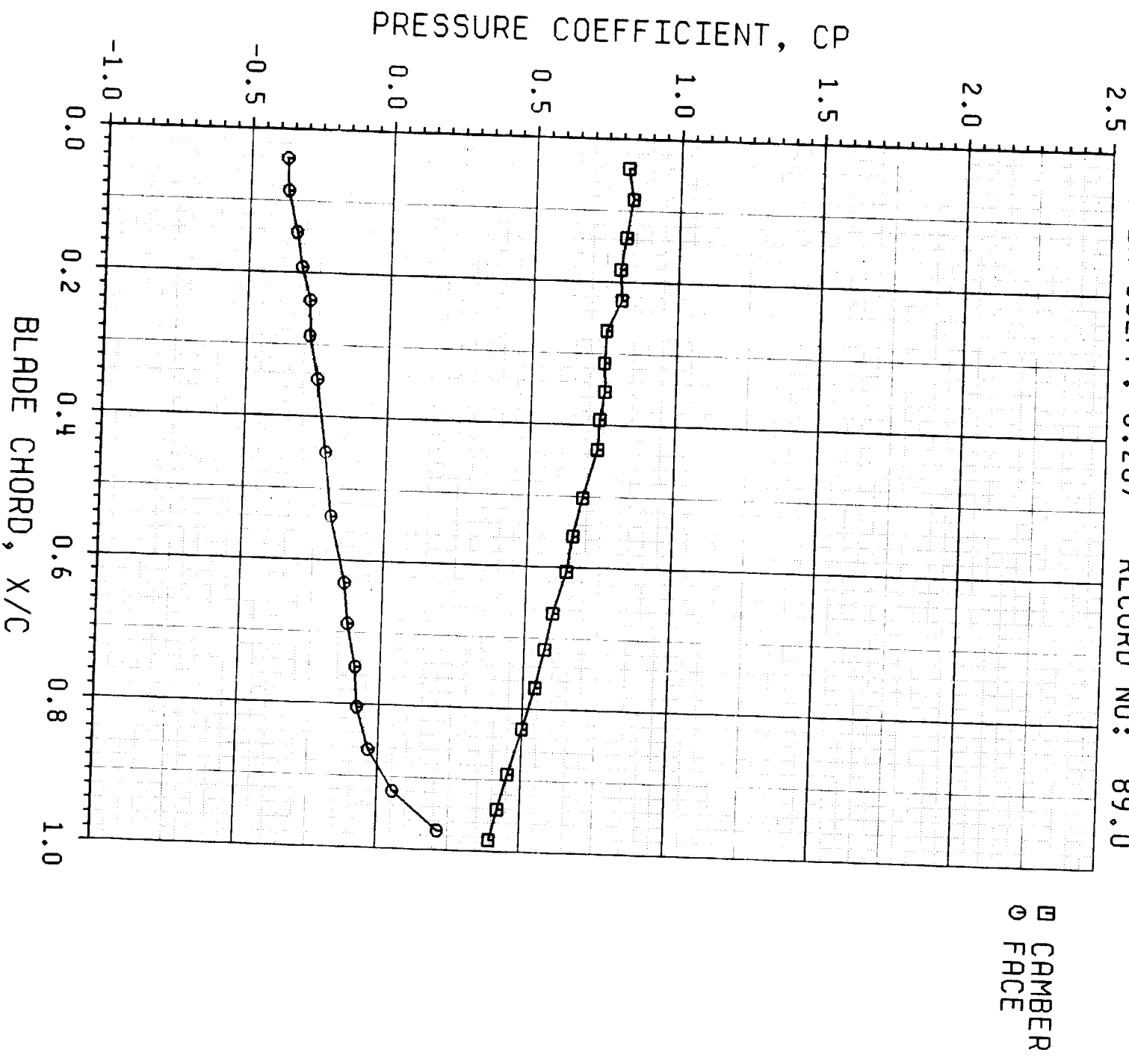
RADIAL STATION: 8

TUNNEL STATIC PRESSURE, P0: 89220.0 PA, 12.940 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	75467.9	10.945	13135.8	1.905	-1.047
0.067	74845.4	10.855	13136.0	1.905	-1.094
0.101	74590.2	10.818	13136.3	1.905	-1.114
0.133	74305.6	10.777	13139.8	1.906	-1.135
0.168	73973.2	10.729	13153.0	1.908	-1.159
0.203	74022.9	10.736	13155.1	1.908	-1.155
0.235	74426.1	10.794	13159.7	1.909	-1.124
0.273	73962.0	10.727	13177.9	1.911	-1.158
0.312	74942.9	10.869	13195.2	1.914	-1.082
0.344	75009.8	10.879	13208.2	1.916	-1.076
0.408	75734.2	10.984	13242.6	1.921	-1.018
0.474	77150.3	11.189	13281.2	1.926	-0.909
0.543	79062.5	11.467	13327.4	1.933	-0.762
0.605	80530.9	11.680	13385.3	1.941	-0.649
0.670	81994.4	11.892	13444.7	1.950	-0.537
0.734	83391.2	12.094	13507.7	1.959	-0.432
0.797	84291.5	12.225	13586.6	1.970	-0.363
0.857	85226.5	12.361	13649.8	1.980	-0.293
0.923	86003.1	12.473	13747.5	1.994	-0.234
0.984	86318.0	12.591	13824.9	2.005	-0.174
FACE					
0.033	93877.9	13.615	13127.9	1.904	0.355
0.079	94261.5	13.671	13128.4	1.904	0.384
0.124	93600.7	13.575	13137.6	1.905	0.333
0.172	93730.2	13.594	13139.4	1.906	0.343
0.221	93472.0	13.556	13144.4	1.906	0.323
0.264	92930.4	13.478	13160.9	1.909	0.282
0.315	92934.7	13.479	13180.4	1.912	0.282
0.414	92540.7	13.421	13231.8	1.919	0.251
0.509	92156.3	13.366	13293.0	1.928	0.221
0.611	91804.7	13.315	13378.8	1.940	0.193
0.679	91418.9	13.259	13439.8	1.949	0.164
0.740	91057.7	13.206	13502.0	1.958	0.136
0.796	90745.9	13.161	13565.9	1.967	0.112
0.860	90753.5	13.162	13644.4	1.979	0.112
0.922	89732.1	13.014	13738.7	1.993	0.037
0.979	88124.2	12.781	13819.7	2.004	-0.079

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9    MACH NO: 0.03    ADV. RATIO: 0.185  
POWER COEFF: 0.207    RECORD NO: 89.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 89.0

## WIND TUNNEL:

STATIC TEMPERATURE:	293.0 K	67.7 F
STATIC PRESSURE:	88900.0 PA	12.893 PSI
AIR DENSITY:	1.0569 KG/M3	0.06598 LBF/FT3
SPEED OF SOUND:	343.16 M/S	1125.90 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.29 M/S	33.78 FT/S

## PROPFAN:

RADIAL STATION:	9	
ROTOR SPEED (RPM):	1207.0	
ADVANCE RATIO:	0.185	
POWER COEFFICIENT:	0.207	
BLADE ANGLE (@ X=41" STA):	22.8 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3830 M	54.45 IN.
RADIUS RATIO (@ MID CHORD):	0.938	
REL MACH NO. (@ MID CHORD):	0.479	

RUN DATE:	08-10-1987
RUN TIME:	14:50:32

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 89.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 88900.0 PA, 12.898 PSI

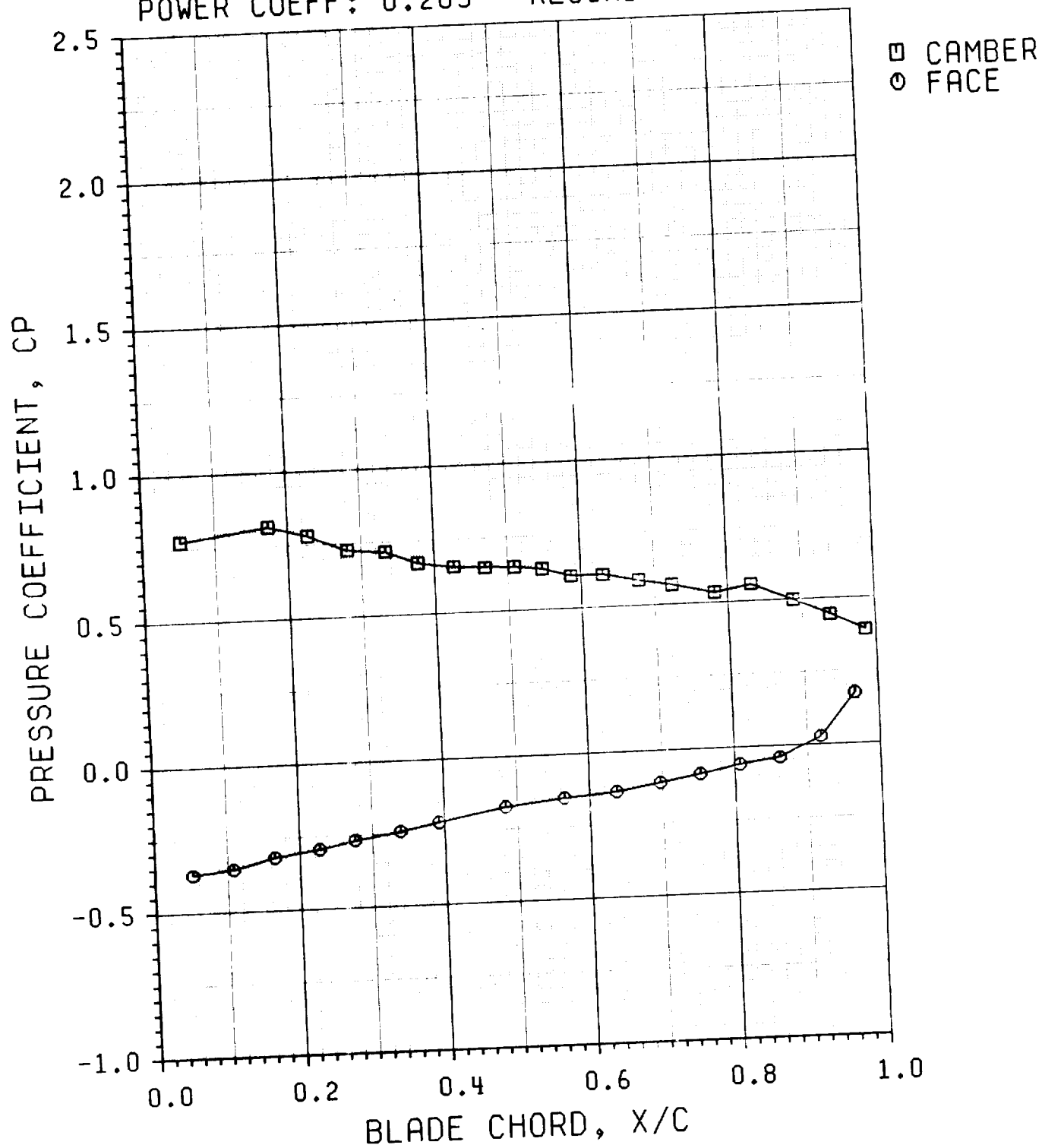
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	77464.0	11.235	13995.2	2.030	-0.817
0.084	77184.9	11.194	14008.1	2.032	-0.836
0.138	77469.9	11.236	14020.5	2.033	-0.815
0.182	77703.7	11.270	14029.5	2.035	-0.798
0.225	77598.8	11.254	14048.0	2.037	-0.804
0.268	78298.8	11.356	14054.2	2.038	-0.754
0.318	78356.4	11.364	14074.3	2.041	-0.749
0.353	78289.8	11.355	14089.7	2.043	-0.753
0.392	78493.8	11.384	14110.5	2.046	-0.738
0.434	78557.5	11.393	14128.4	2.049	-0.732
0.502	79188.8	11.485	14166.0	2.055	-0.686
0.556	79583.0	11.542	14200.1	2.059	-0.656
0.606	79828.4	11.578	14239.4	2.065	-0.637
0.665	80408.6	11.662	14272.8	2.070	-0.595
0.716	80744.4	11.711	14318.0	2.076	-0.570
0.770	81185.5	11.767	14351.8	2.081	-0.541
0.828	81711.4	11.851	14405.1	2.089	-0.499
0.892	82862.2	11.945	14460.5	2.097	-0.452
0.941	82809.0	12.010	14505.0	2.104	-0.420
0.984	83168.2	12.062	14542.1	2.109	-0.394
FACE					
0.041	94141.8	13.654	13993.2	2.029	0.375
0.086	94072.3	13.644	14004.2	2.031	0.369
0.144	93618.9	13.577	14018.1	2.032	0.336
0.192	93312.8	13.533	14026.0	2.034	0.315
0.238	92858.9	13.468	14039.6	2.036	0.282
0.288	92845.2	13.466	14057.3	2.039	0.281
0.348	92420.1	13.404	14083.1	2.043	0.250
0.450	91924.8	13.382	14127.3	2.049	0.214
0.539	91574.8	13.281	14187.0	2.058	0.189
0.631	90829.3	13.173	14241.1	2.065	0.135
0.688	90615.0	13.142	14284.8	2.072	0.120
0.748	90172.9	13.078	14327.6	2.078	0.089
0.804	90040.7	13.059	14380.8	2.086	0.079
0.863	89409.4	12.967	14429.8	2.093	0.035
0.920	88115.8	12.780	14482.0	2.100	-0.054
0.973	85789.5	12.442	14533.7	2.108	-0.214

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10 MACH NO: 0.03 ADV. RATIO: 0.185

POWER COEFF: 0.205 RECORD NO: 149.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 149.0

WIND TUNNEL:

STATIC TEMPERATURE:	291.0 K	64.1 F
STATIC PRESSURE:	89130.0 PA	12.927 PSI
AIR DENSITY:	1.0669 KG/M3	0.06661 LBF/FT3
SPEED OF SOUND:	341.99 M/S	1122.05 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.26 M/S	33.66 FT/S

PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1204.0	
ADVANCE RATIO:	0.185	
POWER COEFFICIENT:	0.205	
BLADE ANGLE (@ X=41" STA):	21.7 DEG.	
BLADE CHORD:	0.2064 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3833 M	54.46 IN.
RADIUS RATIO (@ MID CHORD):	0.964	
REL MACH NO. (@ MID CHORD):	0.493	

RUN DATE:	03-12-1987
RUN TIME:	13:55:22

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 149.0

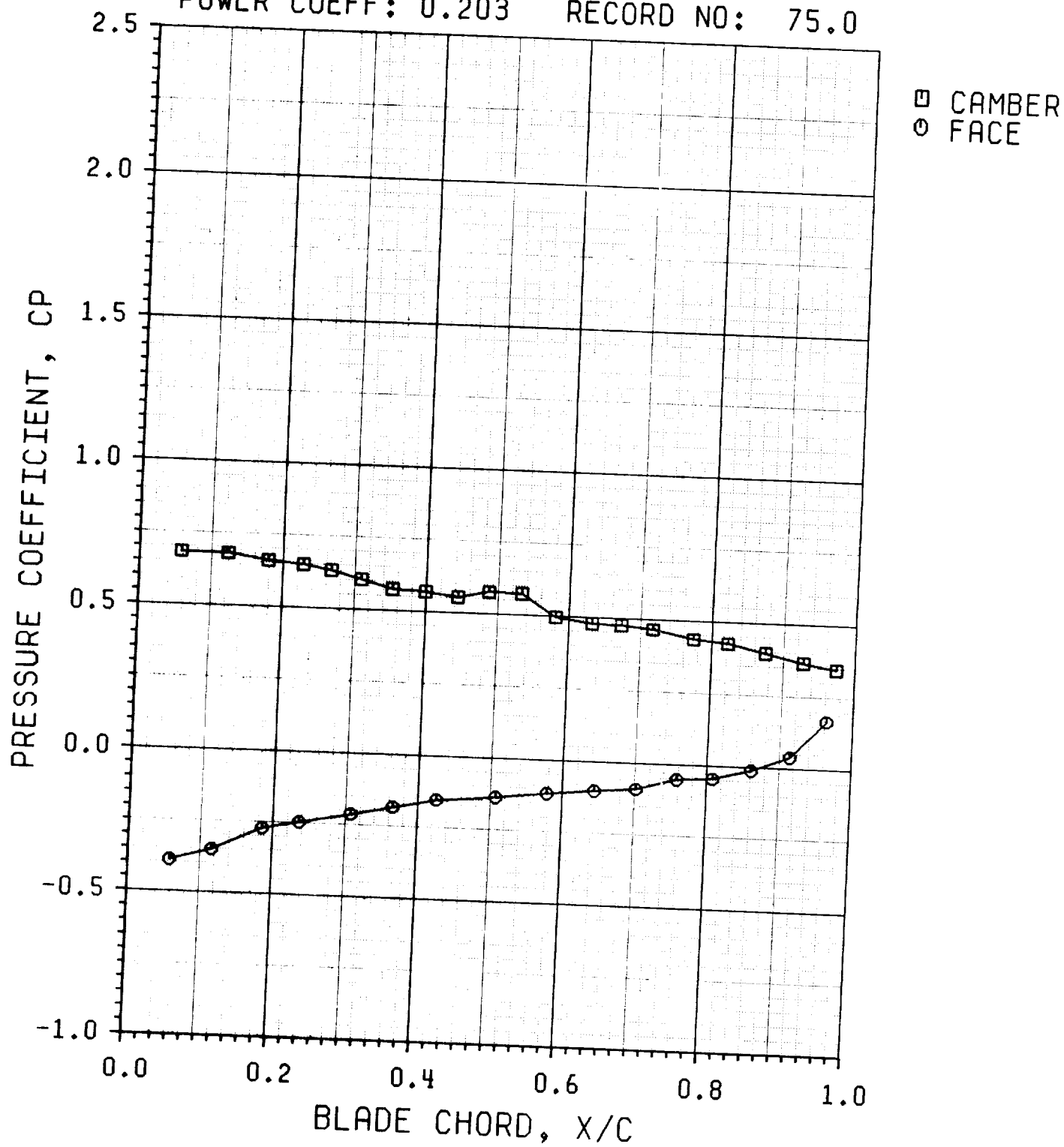
RADIAL STATION: 10

TUNNEL STATIC PRESSURE, PO: 89130.0 PA, 12.927 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	77600.2	11.255	14930.1	2.165	-0.772
0.113	*****	*****	14949.2	2.168	*****
0.173	76942.4	11.159	14960.8	2.170	-0.815
0.227	77451.2	11.233	14974.4	2.172	-0.780
0.281	78249.5	11.849	14992.3	2.174	-0.726
0.333	78370.4	11.366	15018.5	2.178	-0.716
0.377	79037.9	11.463	15026.3	2.179	-0.672
0.426	79254.2	11.494	15049.5	2.183	-0.656
0.469	79349.7	11.508	15074.3	2.186	-0.649
0.509	79369.7	11.511	15087.5	2.188	-0.647
0.547	79484.8	11.528	15106.8	2.191	-0.638
0.586	79915.4	11.590	15131.8	2.195	-0.609
0.630	79903.8	11.589	15146.2	2.197	-0.609
0.679	80249.4	11.639	15176.3	2.201	-0.585
0.724	80536.1	11.680	15204.2	2.205	-0.565
0.782	81015.4	11.750	15237.0	2.210	-0.533
0.832	80645.8	11.696	15271.4	2.215	-0.556
0.889	81514.8	11.822	15309.4	2.220	-0.497
0.938	82320.8	11.939	15349.4	2.226	-0.444
0.985	83151.1	12.060	15379.5	2.231	-0.389
FACE					
0.052	94662.9	13.729	14917.0	2.163	0.371
0.108	94425.4	13.695	14931.2	2.166	0.355
0.165	93880.9	13.616	14948.0	2.168	0.318
0.227	93539.5	13.566	14964.4	2.170	0.295
0.276	93161.0	13.511	14976.5	2.172	0.269
0.339	92790.7	13.458	14996.7	2.175	0.244
0.392	92388.2	13.399	15017.4	2.178	0.217
0.484	91764.5	13.309	15061.2	2.184	0.175
0.565	91438.6	13.262	15101.4	2.190	0.153
0.637	91212.2	13.229	15135.4	2.195	0.138
0.697	90848.6	13.176	15171.3	2.200	0.113
0.752	90465.8	13.120	15212.7	2.206	0.088
0.807	90046.2	13.060	15242.3	2.211	0.060
0.862	89761.0	13.018	15288.8	2.217	0.041
0.919	88725.1	12.868	15327.8	2.223	-0.026
0.967	86472.6	12.541	15359.6	2.228	-0.173

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11 MACH NO: 0.03 ADV. RATIO: 0.184  
POWER COEFF: 0.203 RECORD NO: 75.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 75.0

## WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	88840.0 PA	12.885 PSI
AIR DENSITY:	1.0783 KG/M3	0.06732 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.19 M/S	33.43 FT/S

## PROPFAN:

RADIAL STATION:	11	
ROTOR SPEED (RPM):	1202.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.203	
BLADE ANGLE (@ X=41" STA):	22.5 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3831 M	54.45 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.501	

RUN DATE:	03-09-1987
RUN TIME:	21:05:58

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OF POOR QUALITY

LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 75.0

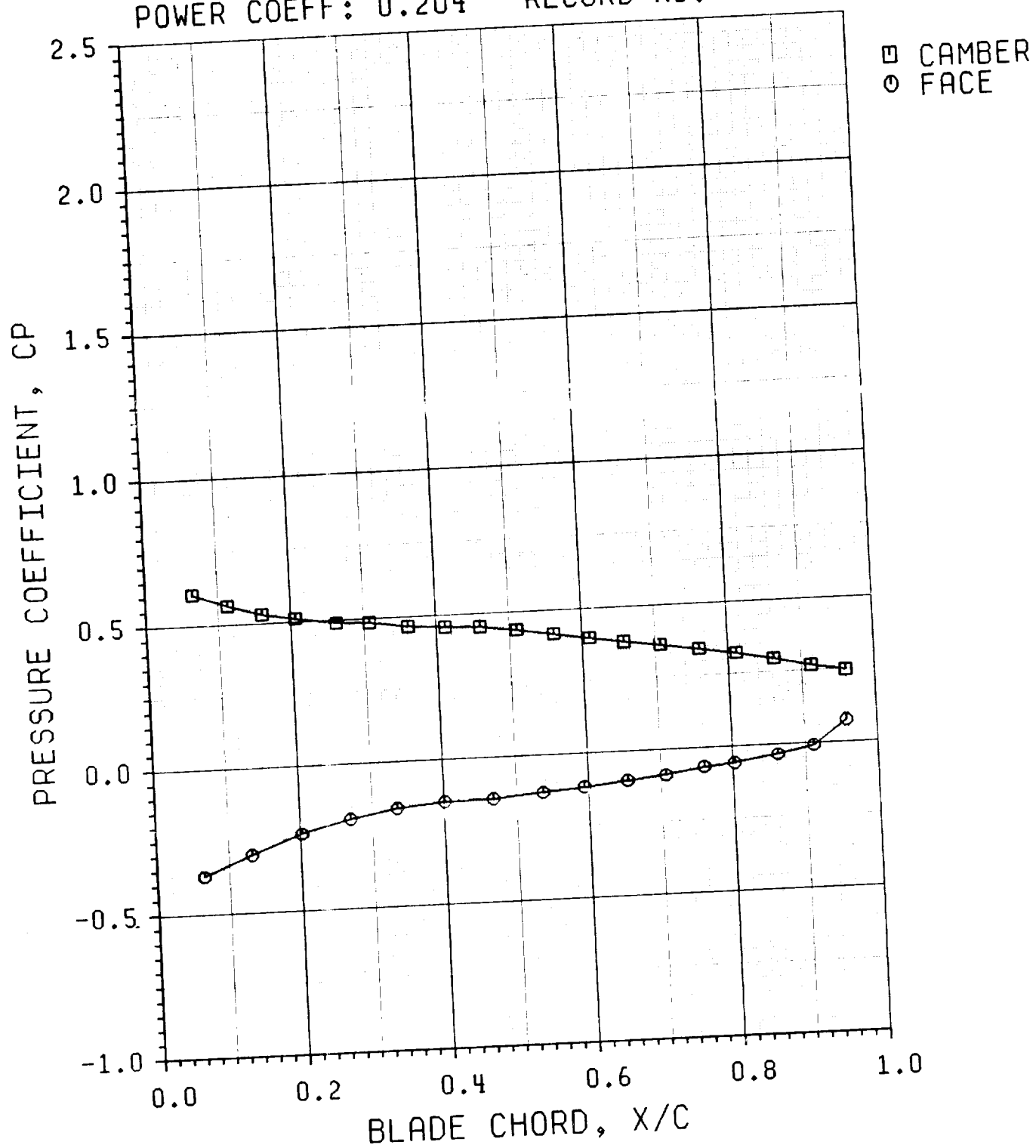
RADIAL STATION: 11

TUNNEL STATIC PRESSURE, PO: 88840.0 PA, 12.885 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	78356.1	11.364	15389.5	2.232	-0.681
0.123	78371.7	11.366	15416.6	2.236	-0.679
0.179	78693.2	11.413	15437.2	2.239	-0.657
0.228	78846.5	11.435	15452.9	2.241	-0.647
0.267	79097.6	11.472	15467.8	2.243	-0.630
0.309	79530.7	11.535	15475.2	2.244	-0.602
0.353	79979.7	11.600	15491.2	2.247	-0.572
0.399	80052.9	11.610	15508.6	2.249	-0.567
0.444	80275.2	11.643	15527.6	2.252	-0.552
0.487	79908.7	11.589	15549.0	2.255	-0.574
0.533	79930.7	11.593	15573.4	2.259	-0.572
0.581	81125.7	11.766	15596.3	2.262	-0.495
0.632	81394.0	11.805	15620.1	2.265	-0.477
0.673	81406.1	11.807	15642.4	2.269	-0.475
0.717	81568.6	11.830	15658.2	2.271	-0.464
0.774	82036.5	11.898	15693.2	2.276	-0.434
0.822	82174.7	11.918	15718.1	2.280	-0.424
0.875	82612.7	11.932	15747.0	2.284	-0.395
0.928	83075.0	12.049	15792.7	2.290	-0.365
0.974	83378.2	12.093	15817.6	2.294	-0.345
FACE					
0.058	94864.1	13.758	15387.0	2.232	0.392
0.116	94268.6	13.672	15404.9	2.234	0.352
0.185	93045.4	13.495	15418.6	2.236	0.273
0.236	92650.4	13.437	15440.7	2.239	0.247
0.307	92155.4	13.366	15461.5	2.242	0.214
0.365	91684.7	13.297	15482.1	2.245	0.184
0.425	91233.7	13.232	15506.1	2.249	0.154
0.507	90984.2	13.196	15534.9	2.253	0.138
0.578	90670.0	13.150	15572.9	2.259	0.118
0.644	90442.1	13.117	15607.2	2.264	0.103
0.702	90255.4	13.090	15633.5	2.267	0.091
0.758	89674.4	13.006	15668.5	2.272	0.053
0.808	89565.2	12.990	15698.9	2.277	0.046
0.861	89028.5	12.912	15729.4	2.281	0.012
0.914	88263.4	12.801	15762.3	2.286	-0.037
0.963	86221.3	12.505	15794.8	2.291	-0.166

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.04    ADV. RATIO: 0.245  
POWER COEFF: 0.204    RECORD NO: 120.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 120.0

WIND TUNNEL:

STATIC TEMPERATURE:	289.0 K	60.5 F
STATIC PRESSURE:	88890.0 PA	12.892 PSI
AIR DENSITY:	1.0714 KG/M3	0.06689 LBF/FT3
SPEED OF SOUND:	340.81 M/S	1118.19 FT/S
INFLOW MACH NUMBER:	0.04	
INFLOW VELOCITY:	13.63 M/S	44.73 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1207.0	
ADVANCE RATIO:	0.245	
POWER COEFFICIENT:	0.204	
BLADE ANGLE (@ X=41" STA):	22.8 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3830 M	54.45 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.507	

RUN DATE:	03-11-1987
RUN TIME:	16:58:01

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OF POOR QUALITY



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 120.0

RADIAL STATION: 12

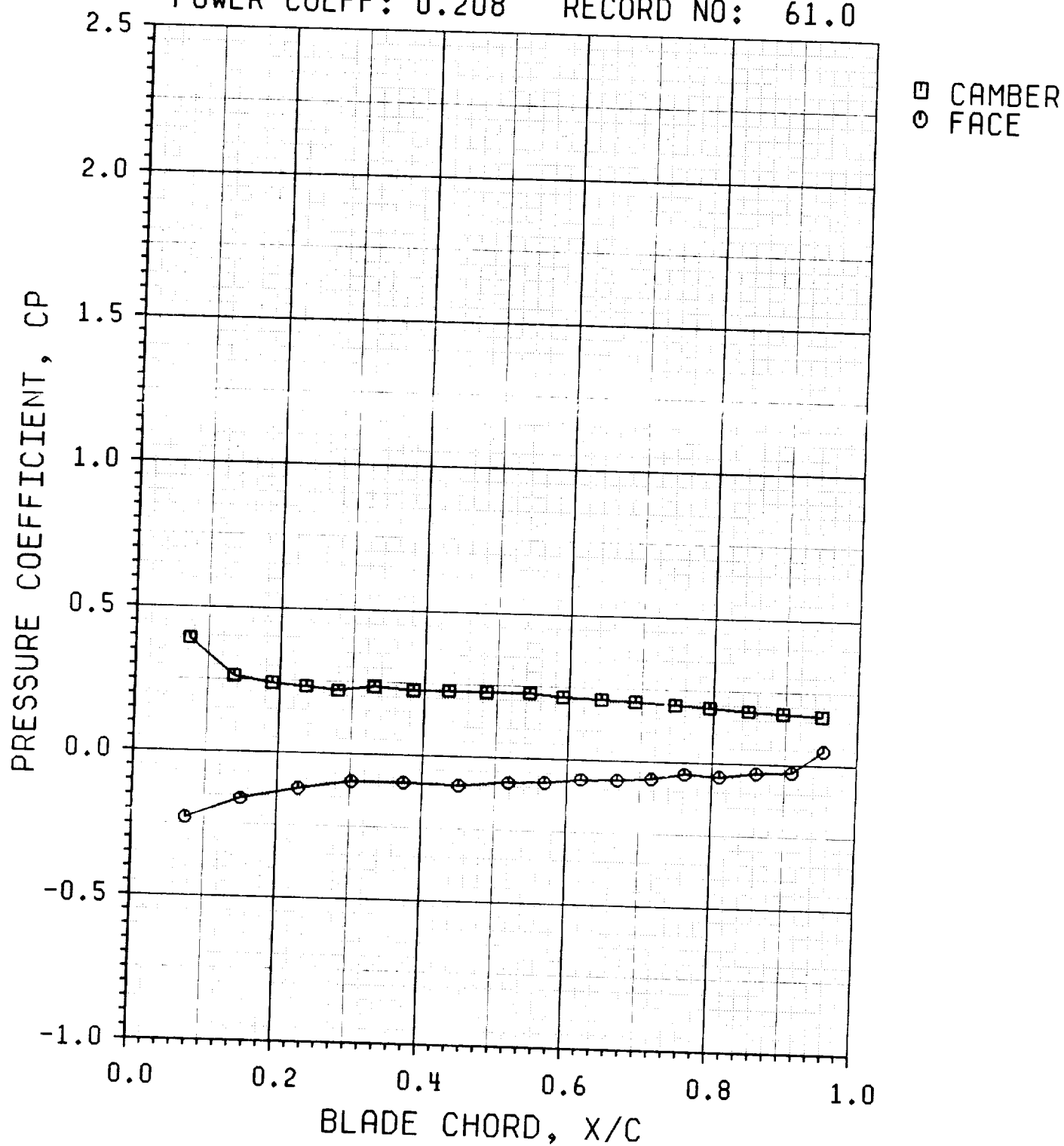
TUNNEL STATIC PRESSURE, PO: 88890.0 PA, 12.892 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	79284.4	11.499	15838.0	2.297	-0.606
0.118	79943.9	11.594	15857.5	2.300	-0.564
0.160	80485.0	11.673	15873.2	2.302	-0.530
0.206	80775.1	11.715	15884.4	2.304	-0.511
0.262	81111.7	11.764	15901.3	2.306	-0.489
0.308	81169.8	11.772	15910.9	2.308	-0.485
0.361	81481.4	11.817	15936.3	2.311	-0.465
0.412	81599.3	11.835	15948.0	2.313	-0.457
0.460	81668.6	11.845	15960.6	2.315	-0.452
0.510	81915.1	11.880	15986.6	2.319	-0.436
0.561	82227.6	11.926	16012.5	2.322	-0.416
0.610	82541.6	11.971	16040.0	2.326	-0.396
0.657	82819.1	12.011	16054.4	2.328	-0.378
0.707	83087.9	12.050	16077.2	2.332	-0.361
0.760	83405.7	12.097	16099.3	2.335	-0.341
0.811	83718.3	12.142	16124.3	2.339	-0.321
0.862	84113.9	12.199	16149.8	2.342	-0.296
0.913	84565.0	12.265	16181.2	2.347	-0.267
0.960	84886.5	12.311	16206.3	2.350	-0.247
FACE					
0.065	94760.9	13.743	15833.2	2.296	0.371
0.132	93681.2	13.587	15855.2	2.300	0.302
0.202	92635.2	13.435	15870.5	2.302	0.236
0.270	91949.6	13.336	15892.1	2.305	0.193
0.335	91467.5	13.266	15911.9	2.308	0.162
0.401	91242.4	13.233	15933.4	2.311	0.148
0.468	91201.5	13.227	15957.8	2.314	0.145
0.537	90986.7	13.196	15981.4	2.318	0.131
0.594	90795.1	13.168	16011.8	2.322	0.119
0.654	90563.8	13.135	16035.7	2.326	0.104
0.707	90355.8	13.105	16066.3	2.330	0.091
0.760	89999.2	13.053	16089.1	2.333	0.069
0.802	89850.6	13.031	16105.3	2.336	0.060
0.862	89465.6	12.975	16141.1	2.341	0.036
0.912	89041.0	12.914	16162.5	2.344	0.009
0.958	87678.6	12.716	16191.6	2.348	-0.075

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13 MACH NO: 0.03 ADV. RATIO: 0.184

POWER COEFF: 0.208 RECORD NO: 61.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 61.0

## WIND TUNNEL:

---

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	88560.0 PA	12.844 PSI
AIR DENSITY:	1.0712 KG/M3	0.06687 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.03	
INFLOW VELOCITY:	10.21 M/S	33.49 FT/S

## PROPFAN:

---

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1206.0	
ADVANCE RATIO:	0.184	
POWER COEFFICIENT:	0.208	
BLADE ANGLE (@ X=41" STA):	22.5 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3831 M	54.45 IN.
RADIUS RATIO (@ MID CHORD):	0.996	
REL MACH NO. (@ MID CHORD):	0.512	

RUN DATE:	03-09-1987
RUN TIME:	16:22:09

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 61.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, P0: 88560.0 PA, 12.844 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	82244.7	11.928	16181.5	2.840	-0.391
0.136	84804.6	12.227	16150.2	2.842	-0.268
0.189	84685.1	12.282	16150.3	2.842	-0.240
0.236	84824.1	12.302	16166.0	2.845	-0.231
0.280	85020.2	12.381	16180.8	2.847	-0.219
0.330	84761.7	12.293	16187.2	2.848	-0.235
0.884	84920.9	12.316	16206.4	2.850	-0.225
0.438	84886.9	12.311	16222.9	2.853	-0.226
0.485	84904.8	12.314	16238.0	2.854	-0.225
0.545	84884.0	12.311	16254.4	2.857	-0.226
0.591	85058.4	12.836	16272.1	2.860	-0.215
0.644	85146.9	12.349	16286.8	2.862	-0.210
0.691	85220.1	12.360	16302.4	2.864	-0.205
0.746	85331.1	12.376	16328.1	2.867	-0.198
0.794	85453.9	12.394	16347.4	2.871	-0.190
0.848	85589.4	12.413	16367.6	2.874	-0.181
0.896	85691.7	12.428	16387.7	2.877	-0.175
0.950	85807.0	12.445	16412.5	2.880	-0.168
FACE					
0.074	92267.2	13.382	16118.0	2.338	0.230
0.150	91151.2	13.220	16138.9	2.340	0.161
0.229	90541.9	13.132	16160.5	2.344	0.123
0.302	90089.6	13.066	16171.2	2.345	0.095
0.374	90095.7	13.067	16193.6	2.349	0.095
0.450	90176.6	13.079	16216.0	2.352	0.100
0.519	89953.4	13.046	16232.6	2.354	0.086
0.569	89896.6	13.038	16250.0	2.357	0.082
0.619	89684.4	13.007	16269.4	2.360	0.069
0.669	89647.3	13.002	16290.0	2.363	0.067
0.716	89532.9	12.985	16307.9	2.365	0.060
0.762	89234.6	12.942	16324.3	2.368	0.041
0.810	89340.4	12.957	16338.9	2.370	0.048
0.861	89098.8	12.922	16354.0	2.372	0.038
0.910	88999.2	12.908	16386.8	2.377	0.027
0.958	87791.6	12.783	16398.2	2.378	-0.047

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B5

(B5.1 through B5.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_{\infty} = 0.200 \pm 0.001$

Advance Ratio,  $J = 0.880 \pm 0.005$

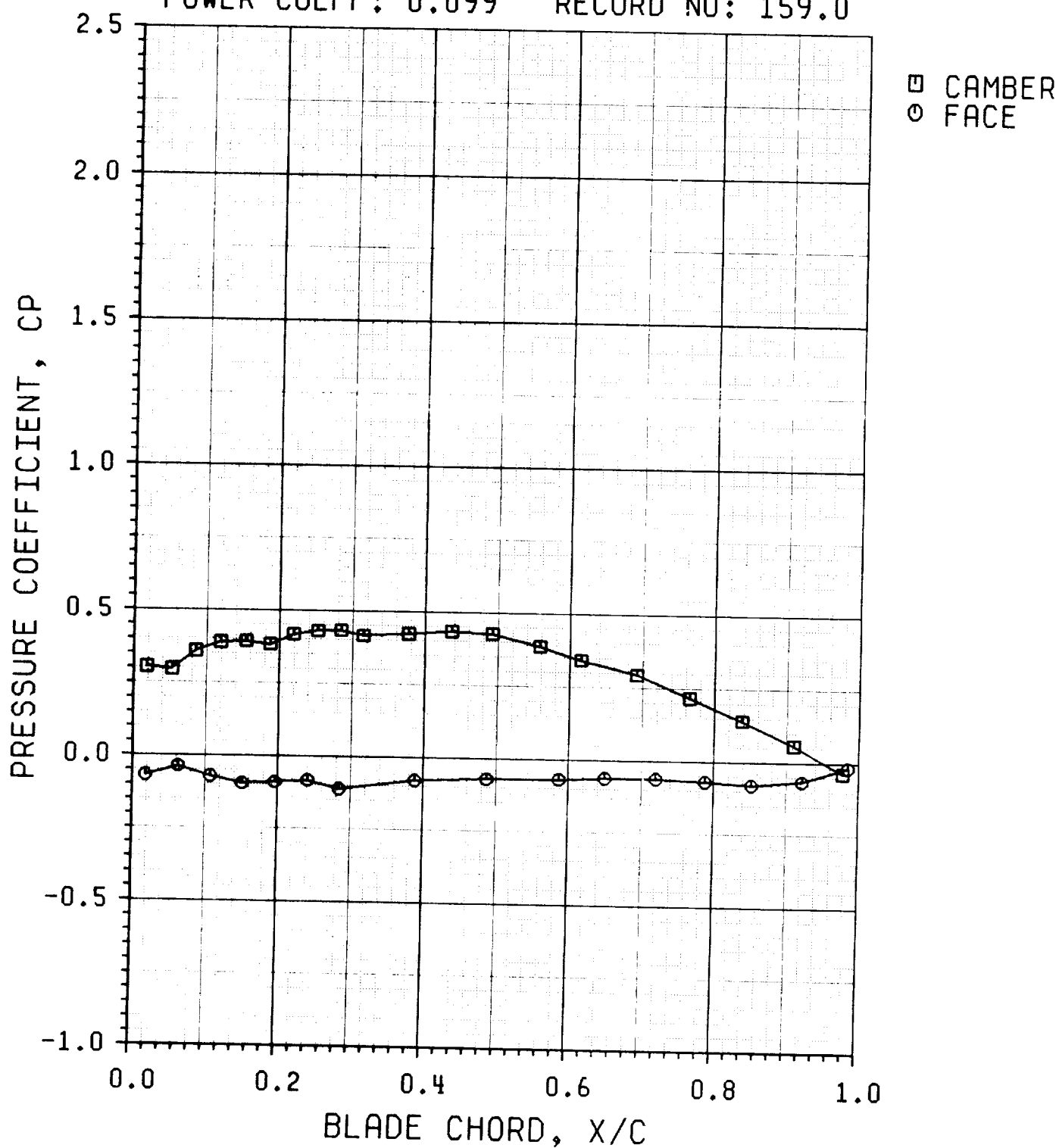
Power Coefficient,  $CP = 0.100 \pm 0.002$

Blade Angle,  $\beta = 26.6 \pm 1.0^{\circ}$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.20 ADV. RATIO: 0.877

POWER COEFF: 0.099 RECORD NO: 159.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 159.0

WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	86880.0 PA	12.600 PSI
AIR DENSITY:	1.0545 KG/M3	0.06583 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.93 M/S	222.86 FT/S

PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1682.0	
ADVANCE RATIO:	0.877	
POWER COEFFICIENT:	0.099	
BLADE ANGLE (@ X=41" STA):	26.6 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3821 M	54.41 IN.
RADIUS RATIO (@ MID CHORD):	0.326	
REL MACH NO. (@ MID CHORD):	0.308	

RUN DATE:	03-12-1987
RUN TIME:	16:43:29

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 159.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, PO: 86880.0 PA, 12.600 PSI

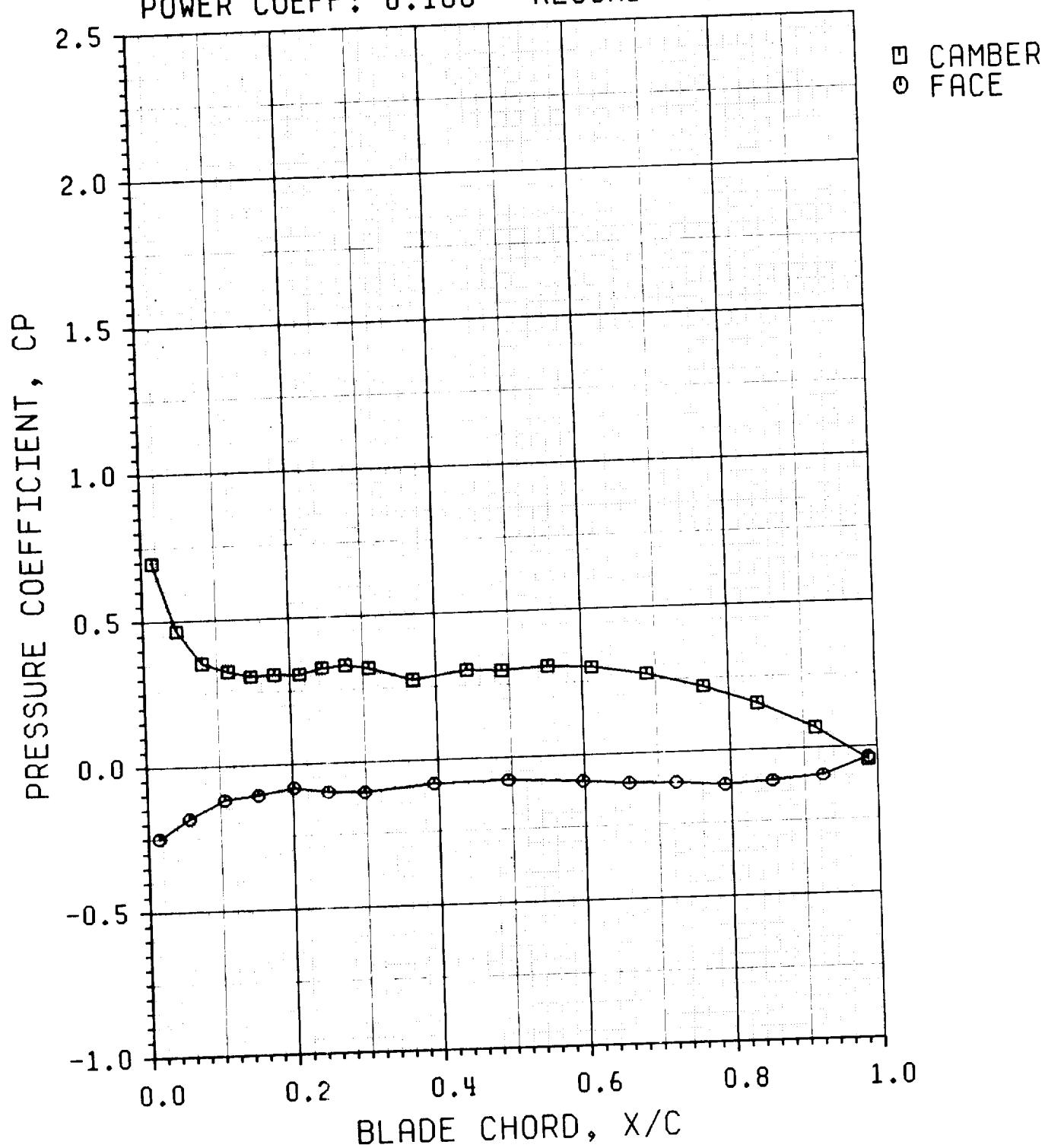
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	85333.8	12.376	5110.9	0.741	-0.303
0.053	85379.1	12.383	5085.1	0.737	-0.295
0.085	85074.5	12.389	5064.4	0.734	-0.357
0.119	84921.6	12.316	5053.3	0.733	-0.388
0.154	84906.4	12.314	5045.1	0.732	-0.391
0.187	84958.6	12.322	5047.6	0.732	-0.381
0.219	84779.4	12.296	5053.3	0.738	-0.416
0.252	84708.7	12.286	5060.9	0.734	-0.429
0.284	84692.7	12.283	5073.7	0.736	-0.431
0.315	84771.1	12.295	5096.8	0.739	-0.414
0.377	84705.4	12.285	5145.0	0.746	-0.423
0.436	84623.3	12.273	5214.3	0.756	-0.433
0.492	84638.5	12.275	5259.0	0.763	-0.426
0.558	84801.6	12.299	5389.8	0.782	-0.386
0.615	85005.9	12.329	5496.5	0.797	-0.341
0.692	85217.2	12.359	5646.5	0.819	-0.294
0.765	85617.8	12.417	5828.2	0.845	-0.217
0.838	86033.9	12.478	6009.7	0.872	-0.141
0.910	86520.2	12.548	6216.8	0.902	-0.058
0.978	87123.8	12.636	6424.0	0.932	0.038
FACE					
0.018	87240.6	12.653	5147.7	0.747	0.070
0.063	87083.6	12.630	5161.5	0.749	0.039
0.107	87250.8	12.654	5158.0	0.748	0.072
0.151	87373.5	12.672	5152.7	0.747	0.096
0.196	87349.6	12.669	5157.2	0.748	0.091
0.241	87314.2	12.663	5164.5	0.749	0.084
0.284	87458.7	12.684	5173.7	0.750	0.112
0.388	87298.7	12.661	5233.9	0.759	0.080
0.487	87256.4	12.655	5333.7	0.774	0.071
0.587	87257.9	12.655	5470.2	0.793	0.069
0.650	87227.9	12.651	5568.3	0.808	0.062
0.720	87234.1	12.652	5702.8	0.827	0.062
0.788	87289.9	12.660	5858.2	0.850	0.070
0.852	87359.9	12.670	6020.7	0.873	0.080
0.922	87290.4	12.660	6216.4	0.902	0.066
0.985	86993.4	12.617	6416.3	0.931	0.018

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.20    ADV. RATIO: 0.871

POWER COEFF: 0.100    RECORD NO: 212.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 212.0

WIND TUNNEL:

STATIC TEMPERATURE:	280.0 K	44.3 F
STATIC PRESSURE:	86460.0 PA	12.540 PSI
AIR DENSITY:	1.0756 KG/M3	0.06715 LBF/FT3
SPEED OF SOUND:	335.46 M/S	1100.64 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.09 M/S	220.13 FT/S

PROPFAN:

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1672.0	
ADVANCE RATIO:	0.871	
POWER COEFFICIENT:	0.100	
BLADE ANGLE (@ X=41" STA):	26.0 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3822 M	54.42 IN.
RADIUS RATIO (@ MID CHORD):	0.461	
REL MACH NO. (@ MID CHORD):	0.388	

RUN DATE:	03-13-1987
RUN TIME:	22:58:47

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 212.0

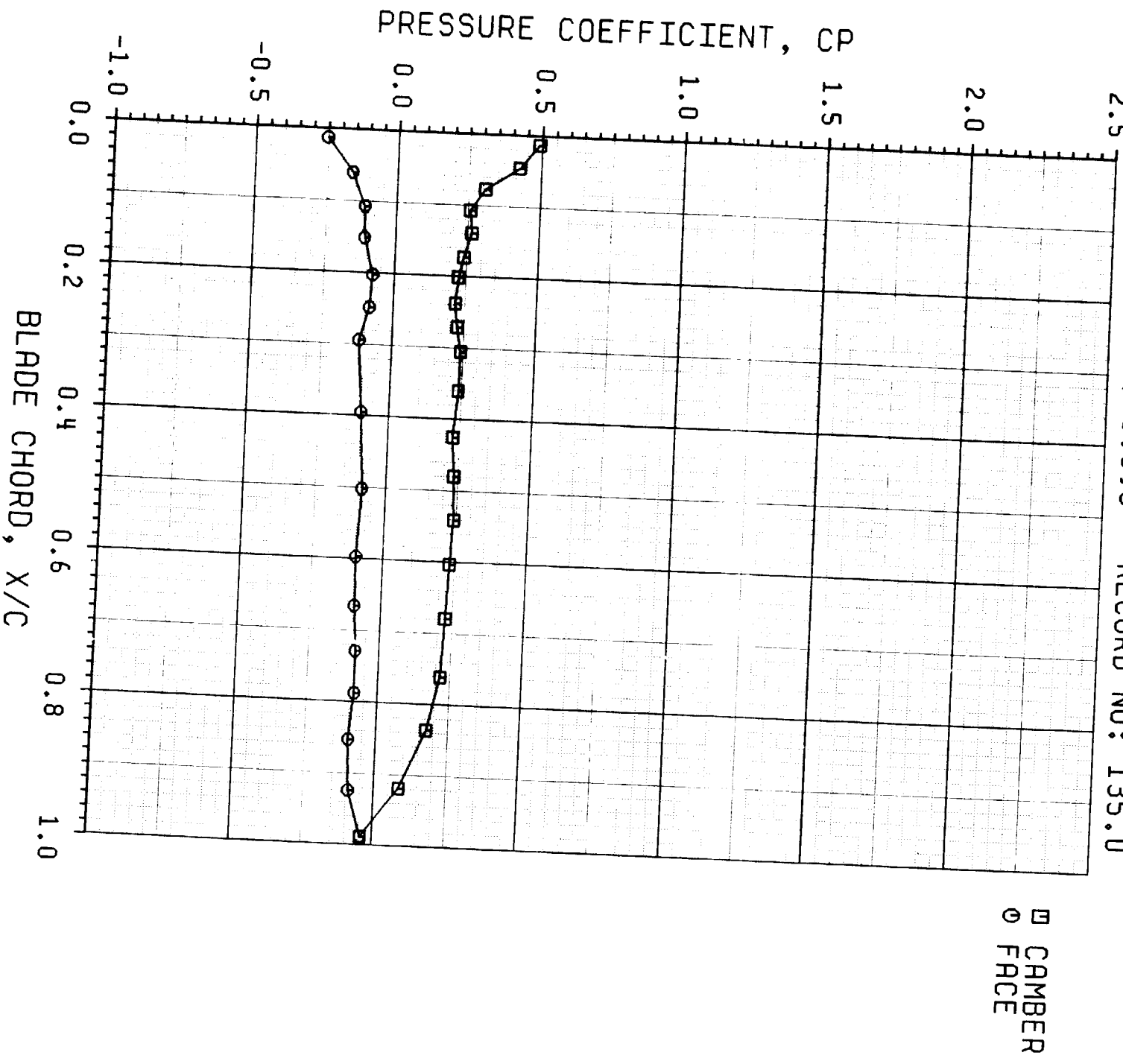
RADIAL STATION: 2

TUNNEL STATIC PRESSURE, PO: 86460.0 PA, 12.540 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	80412.7	11.662	8660.1	1.256	-0.698
0.046	82472.1	11.961	8597.0	1.247	-0.464
0.080	83451.0	12.103	8529.5	1.237	-0.353
0.115	83718.8	12.142	8477.5	1.230	-0.323
0.146	83891.7	12.167	8434.6	1.223	-0.304
0.178	83893.9	12.167	8353.1	1.211	-0.307
0.213	83900.9	12.168	8360.3	1.213	-0.306
0.244	83740.1	12.145	8339.2	1.209	-0.326
0.276	83691.1	12.138	8319.1	1.207	-0.333
0.308	83795.9	12.153	8312.9	1.206	-0.320
0.368	84173.2	12.208	8318.9	1.206	-0.275
0.442	83943.4	12.175	8328.1	1.208	-0.302
0.490	83960.7	12.177	8383.9	1.216	-0.298
0.553	83866.1	12.163	8454.0	1.226	-0.307
0.613	83903.9	12.169	8546.3	1.239	-0.299
0.688	84107.1	12.198	8686.8	1.260	-0.271
0.765	84501.6	12.255	8863.1	1.285	-0.221
0.838	85022.9	12.331	9068.6	1.315	-0.158
0.916	85839.7	12.450	9321.7	1.352	-0.067
0.987	86903.8	12.604	9570.9	1.388	0.046
FACE					
0.015	88626.4	12.854	8698.7	1.262	0.249
0.057	88030.9	12.767	8623.4	1.251	0.182
0.106	87496.4	12.690	8549.2	1.240	0.121
0.152	87375.6	12.672	8495.6	1.232	0.108
0.201	87176.7	12.643	8437.8	1.224	0.085
0.248	87319.8	12.664	8403.7	1.219	0.102
0.298	87360.1	12.670	8377.9	1.215	0.107
0.393	87171.9	12.643	8374.4	1.215	0.085
0.495	87146.1	12.639	8429.3	1.223	0.081
0.597	87252.9	12.655	8549.9	1.240	0.093
0.660	87369.0	12.671	8650.2	1.255	0.105
0.724	87402.9	12.676	8779.2	1.273	0.107
0.791	87533.6	12.695	8937.7	1.296	0.120
0.856	87476.2	12.687	9123.7	1.323	0.111
0.925	87358.2	12.670	9346.4	1.356	0.096
0.987	86825.9	12.593	9575.4	1.389	0.038

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.20    ADV. RATIO: 0.881  
POWER COEFF: 0.098    RECORD NO: 135.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 135.0

## WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	86960.0 PA	12.612 PSI
AIR DENSITY:	1.0704 KG/M3	0.06682 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.45 M/S	221.80 FT/S

## PROPFAN:

RADIAL STATION:	3	
ROTOR SPEED (RPM):	1663.0	
ADVANCE RATIO:	0.881	
POWER COEFFICIENT:	0.098	
BLADE ANGLE (@ X=41" STA):	27.6 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3818 M	54.40 IN.
RADIUS RATIO (@ MID CHORD):	0.581	
REL MACH NO. (@ MID CHORD):	0.460	

RUN DATE:	03-11-1987
RUN TIME:	20:50:05

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 135.0

RADIAL STATION: 3

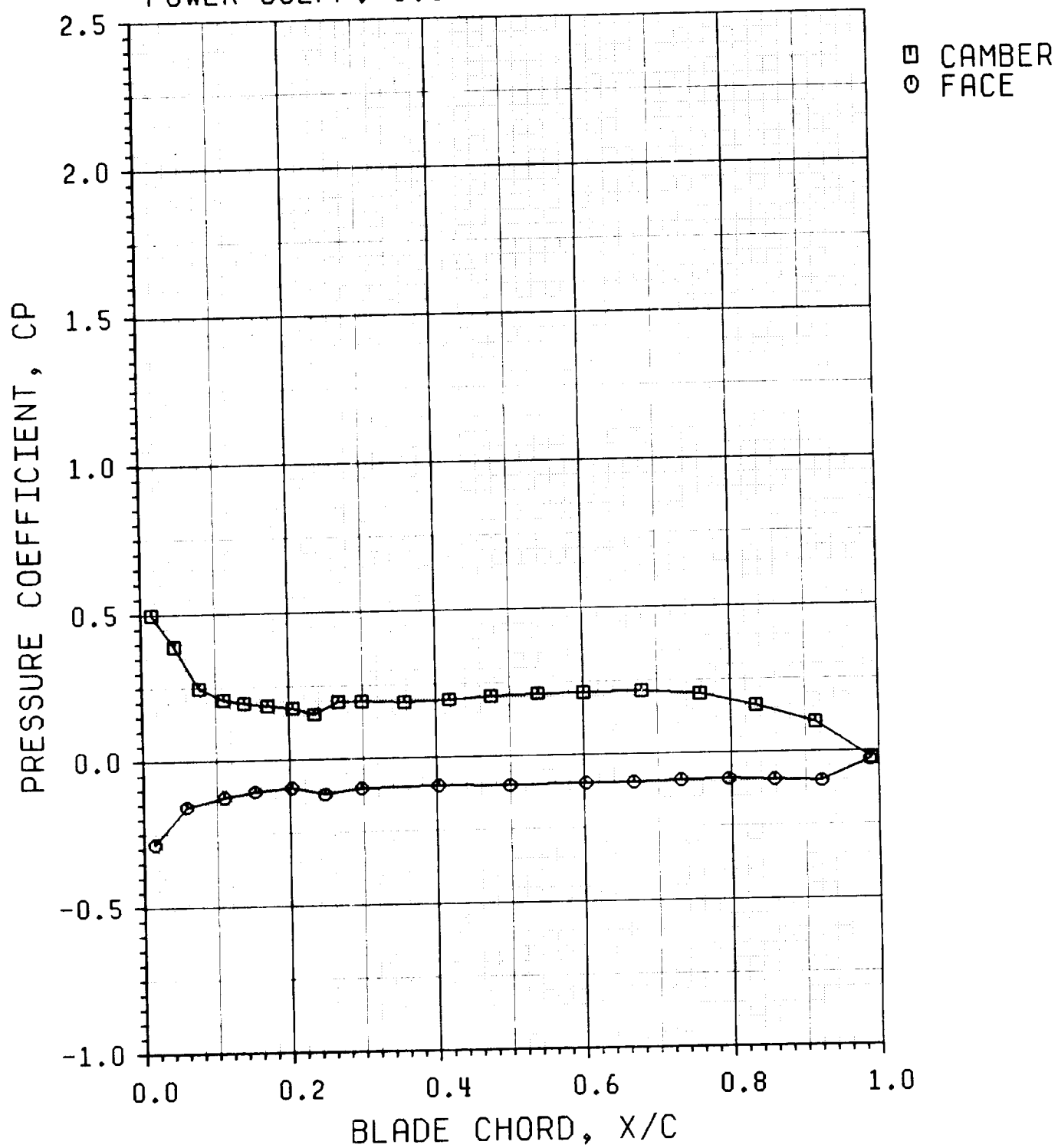
TUNNEL STATIC PRESSURE, PO: 86960.0 PA, 12.612 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	80835.6	11.724	12508.2	1.813	-0.490
0.046	81688.0	11.847	12421.7	1.802	-0.424
0.077	83155.8	12.060	12338.6	1.790	-0.308
0.107	83790.1	12.152	12275.9	1.780	-0.258
0.139	83726.0	12.143	12209.8	1.771	-0.265
0.173	84048.0	12.190	12143.8	1.761	-0.240
0.201	84242.9	12.218	12105.7	1.756	-0.224
0.238	84349.7	12.233	12057.0	1.749	-0.216
0.271	84242.6	12.218	12025.9	1.744	-0.226
0.305	84069.6	12.193	12006.3	1.741	-0.241
0.360	84090.8	12.196	11980.4	1.738	-0.239
0.425	84249.9	12.219	11985.8	1.788	-0.226
0.480	84185.1	12.202	12002.4	1.741	-0.235
0.541	84056.6	12.191	12072.4	1.751	-0.241
0.603	84127.3	12.201	12145.5	1.762	-0.283
0.679	84196.4	12.211	12296.8	1.783	-0.225
0.761	84257.6	12.220	12487.6	1.811	-0.216
0.836	84754.4	12.292	12711.7	1.844	-0.174
0.919	85842.3	12.450	12996.8	1.885	-0.086
0.989	87547.8	12.697	13275.6	1.925	0.044
FACE					
0.013	90115.1	13.070	12530.9	1.817	0.252
0.061	88962.7	12.902	12418.7	1.801	0.161
0.107	88362.4	12.815	12315.1	1.786	0.114
0.151	88322.2	12.810	12230.0	1.774	0.111
0.202	87910.8	12.750	12151.3	1.762	0.078
0.248	87988.3	12.761	12090.8	1.754	0.085
0.294	88876.9	12.818	12048.5	1.747	0.118
0.395	88158.5	12.786	12007.9	1.742	0.100
0.502	87998.1	12.763	12054.7	1.748	0.086
0.597	88152.8	12.785	12146.7	1.762	0.098
0.666	88138.6	12.783	12277.3	1.781	0.096
0.729	88024.2	12.766	12393.2	1.797	0.086
0.788	88009.7	12.764	12547.0	1.820	0.084
0.853	88216.4	12.794	12751.0	1.849	0.099
0.924	88169.7	12.787	12996.3	1.885	0.093
0.988	87547.6	12.697	13260.3	1.923	0.044

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4    MACH NO: 0.20    ADV. RATIO: 0.875

POWER COEFF: 0.098    RECORD NO: 199.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 199.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	58.7 F
STATIC PRESSURE:	86470.0 PA	12.541 PSI
AIR DENSITY:	1.0459 KG/M3	0.06529 LBF/FT3
SPEED OF SOUND:	340.22 M/S	1116.25 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	68.04 M/S	223.25 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1687.0	
ADVANCE RATIO:	0.875	
POWER COEFFICIENT:	0.098	
BLADE ANGLE (@ X=41" STA):	26.0 DEG.	
BLADE CHORD:	0.5676 M	22.85 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3822 M	54.42 IN.
RADIUS RATIO (@ MID CHORD):	0.676	
REL MACH NO. (@ MID CHORD):	0.525	

RUN DATE:	03-13-1987
RUN TIME:	17:50:16



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

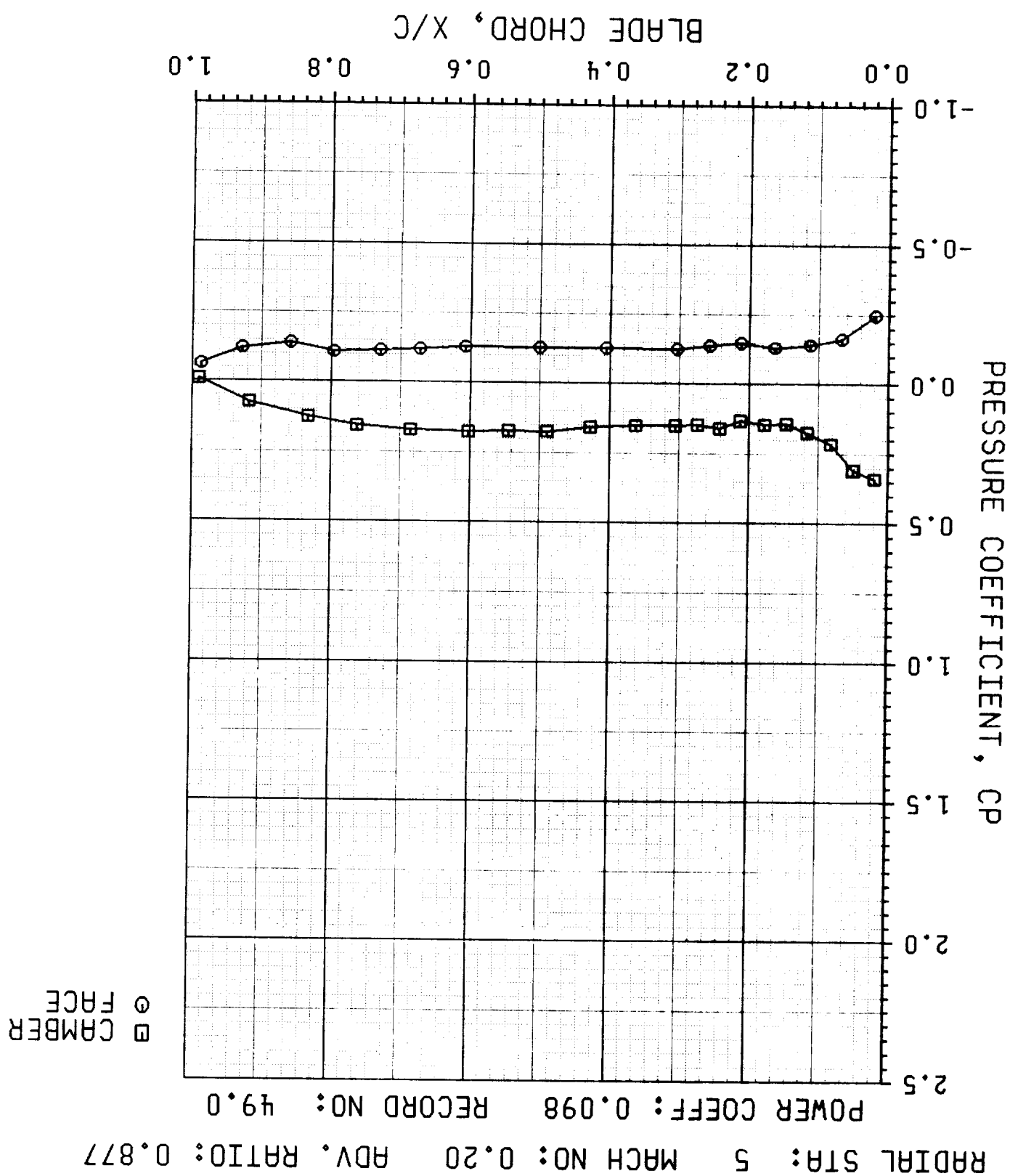
RECORD NUMBER: 199.0

RADIAL STATION: 4

TUNNEL STATIC PRESSURE, P0: 86470.0 PA, 12.541 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	78393.2	11.370	16216.7	2.352	-0.498
0.045	80169.5	11.627	16134.9	2.340	-0.390
0.078	82488.9	11.964	16042.3	2.327	-0.248
0.111	83162.8	12.061	15962.5	2.315	-0.207
0.139	83372.0	12.092	15903.5	2.307	-0.195
0.171	83542.9	12.116	15838.6	2.297	-0.185
0.205	83699.5	12.139	15784.0	2.289	-0.176
0.234	84043.4	12.189	15740.4	2.283	-0.154
0.267	83402.9	12.096	15710.2	2.278	-0.195
0.299	83419.6	12.099	15677.5	2.274	-0.195
0.357	83492.1	12.109	15652.7	2.270	-0.190
0.418	83396.3	12.095	15653.3	2.270	-0.196
0.475	83261.7	12.076	15680.5	2.274	-0.205
0.538	83154.5	12.060	15744.5	2.283	-0.211
0.600	83098.3	12.052	15828.3	2.296	-0.213
0.679	83039.4	12.043	15993.5	2.320	-0.215
0.758	83200.2	12.067	16202.9	2.350	-0.202
0.834	83835.1	12.159	16457.7	2.387	-0.160
0.914	84795.3	12.298	16775.9	2.433	-0.100
0.990	86908.4	12.605	17118.4	2.482	0.026
FACE					
0.015	91103.7	13.213	16251.9	2.357	0.285
0.059	89029.9	12.912	16139.5	2.341	0.159
0.110	88511.6	12.837	16012.2	2.322	0.128
0.152	88204.1	12.792	15924.3	2.310	0.109
0.202	88027.7	12.767	15846.1	2.298	0.098
0.247	88373.5	12.817	15782.6	2.289	0.121
0.297	88075.9	12.774	15735.3	2.282	0.102
0.402	88006.4	12.764	15693.7	2.277	0.098
0.499	88061.9	12.772	15761.1	2.286	0.101
0.602	88025.4	12.767	15891.4	2.305	0.098
0.667	88021.4	12.766	15990.3	2.319	0.097
0.731	87952.2	12.756	16160.4	2.344	0.092
0.796	87957.8	12.757	16356.8	2.372	0.091
0.858	88036.9	12.768	16562.1	2.402	0.095
0.922	88163.8	12.787	16814.3	2.439	0.101
0.988	87003.0	12.618	17110.0	2.482	0.031

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 49.0

## WIND TUNNEL:

STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	87010.0 PA	12.619 PSI
AIR DENSITY:	1.0786 KG/M3	0.06784 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.21 M/S	220.52 FT/S

## PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1663.0	
ADVANCE RATIO:	0.877	
POWER COEFFICIENT:	0.098	
BLADE ANGLE (@ X=41" STA):	25.6 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3823 M	54.42 IN.
RADIUS RATIO (@ MID CHORD):	0.743	
REL MACH NO. (@ MID CHORD):	0.569	

RUN DATE:	03-06-1987
RUN TIME:	16:58:02

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 49.0

RADIAL STATION: 5

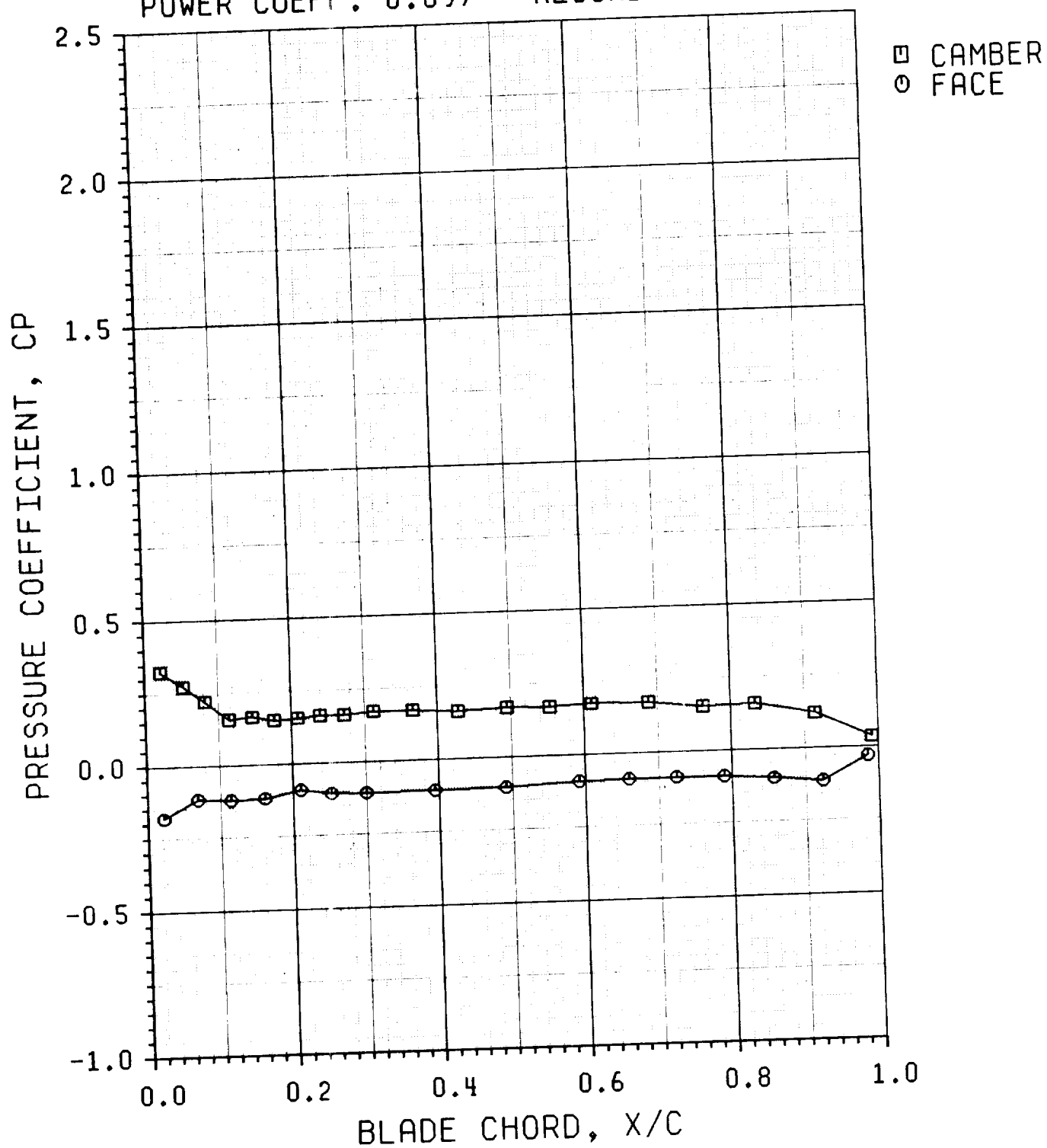
TUNNEL STATIC PRESSURE, PO: 87010.0 PA, 12.619 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	80493.2	11.674	19209.7	2.786	-0.339
0.050	81145.8	11.769	19129.5	2.774	-0.307
0.082	82931.6	12.028	19048.8	2.763	-0.214
0.116	83699.8	12.139	18979.9	2.753	-0.174
0.146	84327.7	12.230	18922.1	2.744	-0.142
0.177	84246.4	12.218	18872.7	2.737	-0.146
0.212	84518.1	12.258	18826.7	2.730	-0.132
0.241	83996.4	12.182	18794.9	2.726	-0.160
0.273	84243.7	12.218	18766.7	2.722	-0.147
0.305	84190.3	12.210	18745.9	2.719	-0.150
0.362	84187.4	12.210	18734.3	2.717	-0.151
0.427	84069.4	12.193	18749.9	2.719	-0.157
0.489	83734.9	12.144	18782.6	2.724	-0.174
0.544	83753.7	12.147	18845.3	2.733	-0.178
0.602	83666.9	12.184	18945.6	2.748	-0.176
0.685	83736.5	12.145	19113.3	2.772	-0.171
0.762	83990.7	12.181	19316.4	2.802	-0.156
0.832	84549.2	12.262	19538.3	2.834	-0.126
0.917	85536.4	12.406	19860.0	2.880	-0.074
0.990	87212.2	12.649	20171.0	2.925	0.010
FACE					
0.019	91756.9	13.308	19234.9	2.790	0.247
0.067	90132.8	13.072	19112.3	2.772	0.163
0.112	89689.0	13.008	19005.9	2.756	0.141
0.168	89493.1	12.979	18921.0	2.744	0.131
0.211	89774.6	13.020	18862.7	2.736	0.147
0.256	89587.9	12.993	18818.8	2.729	0.137
0.303	89352.1	12.959	18783.8	2.724	0.125
0.405	89393.6	12.965	18759.2	2.721	0.127
0.500	89405.3	12.967	18811.3	2.728	0.127
0.607	89460.1	12.975	18969.9	2.751	0.129
0.672	89299.4	12.951	19089.6	2.769	0.120
0.729	89216.7	12.939	19237.1	2.790	0.115
0.796	89123.9	12.926	19424.3	2.817	0.109
0.858	89748.7	13.016	19624.0	2.846	0.140
0.928	89420.9	12.969	19894.0	2.885	0.121
0.987	88299.7	12.806	20151.4	2.928	0.064

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6    MACH NO: 0.20    ADV. RATIO: 0.872

POWER COEFF: 0.097    RECORD NO: 186.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 186.0

WIND TUNNEL:

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STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	86620.0 PA	12.568 PSI
AIR DENSITY:	1.0518 KG/M3	0.06564 LBF/FT3
SPEED OF SOUND:	339.68 M/S	1114.32 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.93 M/S	222.86 FT/S

PROPFAN:

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RADIAL STATION:	6	
ROTOR SPEED (RPM):	1690.0	
ADVANCE RATIO:	0.872	
POWER COEFFICIENT:	0.097	
BLADE ANGLE (@ X=41" STA):	26.4 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3821 M	54.41 IN.
RADIUS RATIO (@ MID CHORD):	0.807	
REL MACH NO. (@ MID CHORD):	0.615	

RUN DATE:	03-13-1987
RUN TIME:	13:56:51

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 186.0

RADIAL STATION: 6

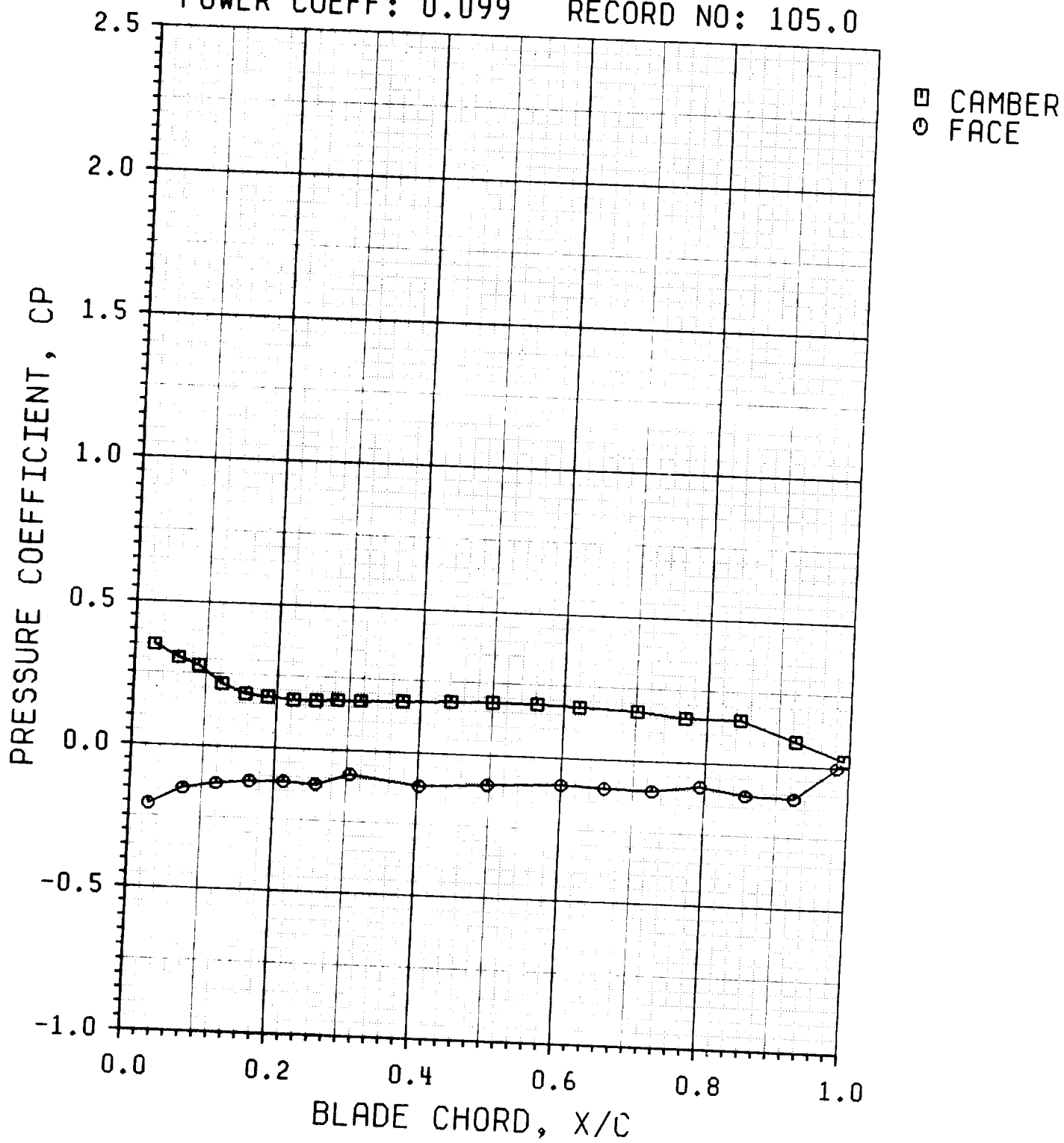
TUNNEL STATIC PRESSURE, PO: 86620.0 PA, 12.563 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	79340.6	11.507	22328.6	3.238	-0.326
0.053	80518.6	11.678	22279.9	3.231	-0.274
0.082	81712.4	11.851	22240.0	3.226	-0.221
0.114	83136.2	12.057	22215.5	3.222	-0.157
0.146	82987.1	12.036	22186.6	3.218	-0.164
0.176	83284.9	12.079	22144.9	3.212	-0.151
0.208	83172.2	12.063	22126.7	3.209	-0.156
0.239	83046.1	12.044	22121.5	3.208	-0.162
0.272	83026.4	12.042	22110.1	3.207	-0.163
0.312	82838.8	12.014	22113.0	3.207	-0.171
0.366	82846.2	12.015	22129.8	3.210	-0.171
0.428	82999.4	12.038	22172.2	3.216	-0.163
0.495	82851.8	12.016	22226.2	3.224	-0.170
0.558	82868.2	12.019	22297.7	3.234	-0.168
0.610	82713.4	11.996	22389.9	3.247	-0.174
0.688	82730.6	11.999	22553.6	3.271	-0.172
0.762	83165.7	12.062	22744.2	3.299	-0.152
0.833	83000.6	12.038	22954.2	3.329	-0.158
0.914	83850.7	12.161	23218.9	3.868	-0.119
0.991	85823.0	12.447	23502.5	3.409	-0.034
FACE					
0.022	90657.5	13.148	22340.0	3.240	0.181
0.069	89231.6	12.941	22269.9	3.230	0.117
0.114	89323.0	12.955	22215.6	3.222	0.122
0.161	89254.1	12.945	22165.6	3.215	0.119
0.210	88665.3	12.859	22140.3	3.211	0.092
0.252	89017.7	12.910	22120.9	3.208	0.108
0.300	89027.2	12.912	22104.9	3.206	0.109
0.394	88990.6	12.907	22136.7	3.211	0.107
0.491	88944.7	12.900	22210.0	3.221	0.105
0.591	88697.8	12.864	22358.3	3.243	0.093
0.659	88644.5	12.856	22476.0	3.260	0.090
0.724	88633.9	12.855	22627.1	3.282	0.089
0.789	88669.5	12.860	22789.6	3.305	0.090
0.857	88947.3	12.900	23009.5	3.337	0.101
0.923	89285.3	12.949	23235.8	3.370	0.115
0.985	87390.6	12.674	23469.9	3.404	0.038

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.20 ADV. RATIO: 0.875

POWER COEFF: 0.099 RECORD NO: 105.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 105.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	86800.0 PA	12.589 PSI
AIR DENSITY:	1.0647 KG/M3	0.06647 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.57 M/S	221.70 FT/S

## PROPFAN:

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RADIAL STATION:	7	
ROTOR SPEED (RPM):	1677.0	
ADVANCE RATIO:	0.875	
POWER COEFFICIENT:	0.099	
BLADE ANGLE (@ X=41" STA):	27.6 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3818 M	54.40 IN.
RADIUS RATIO (@ MID CHORD):	0.860	
REL MACH NO. (@ MID CHORD):	0.650	

RUN DATE:	03-10-1987
RUN TIME:	19:46:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 105.0

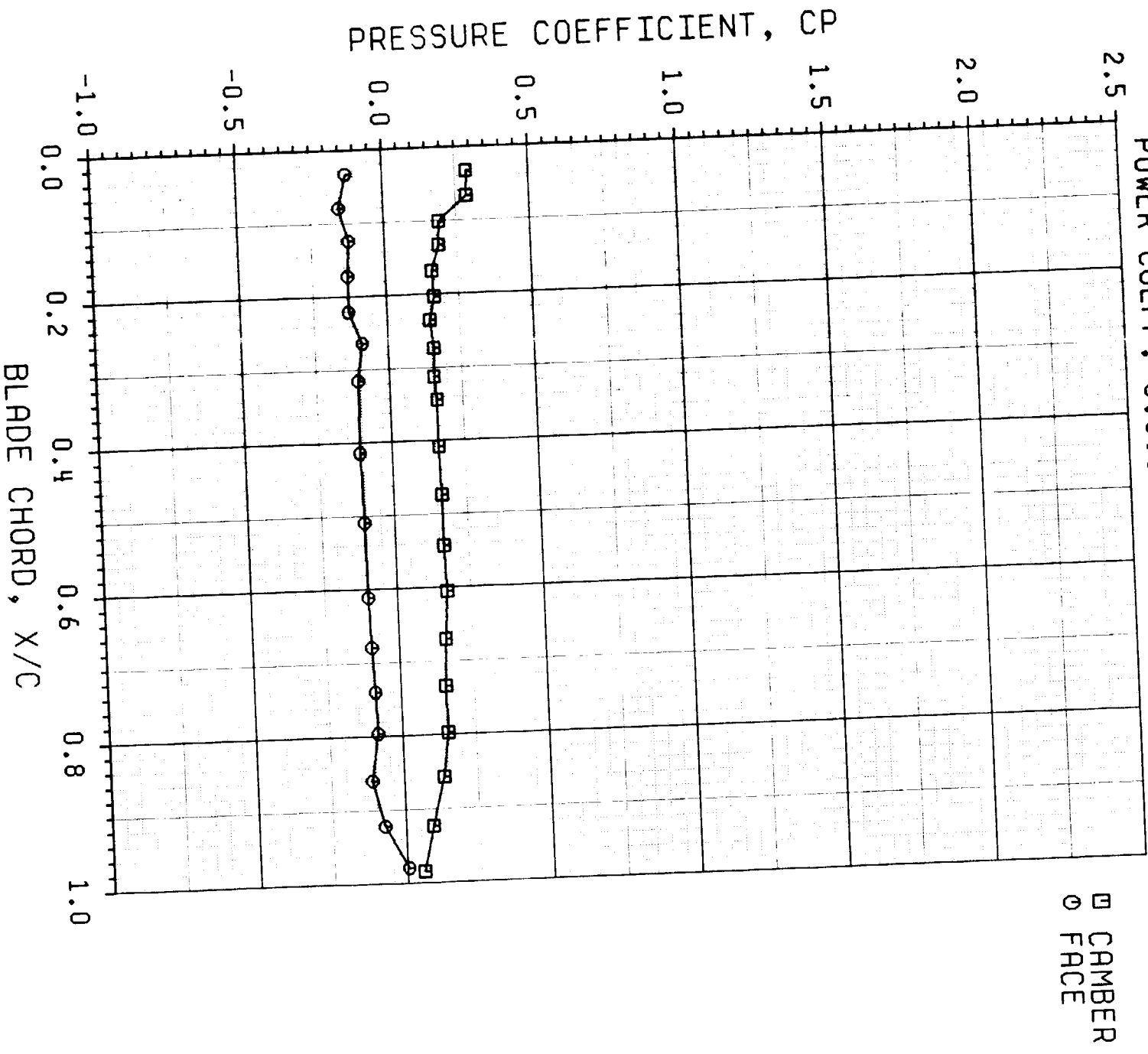
RADIAL STATION: 7

TUNNEL STATIC PRESSURE, PO: 86800.0 PA, 12.589 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	78069.9	11.323	25013.7	3.628	-0.349
0.061	79194.7	11.486	25001.6	3.626	-0.804
0.090	79877.1	11.585	24994.8	3.625	-0.277
0.123	81438.4	11.811	24981.6	3.623	-0.216
0.156	82232.1	11.926	24970.1	3.621	-0.183
0.187	82442.7	11.957	24956.4	3.619	-0.175
0.228	82634.1	11.985	24969.7	3.621	-0.167
0.254	82613.6	11.982	24985.8	3.624	-0.168
0.284	82586.8	11.971	24989.6	3.624	-0.171
0.316	82533.2	11.970	25004.6	3.626	-0.171
0.375	82420.4	11.954	25036.5	3.631	-0.175
0.442	82287.4	11.934	25094.4	3.640	-0.180
0.500	82190.9	11.920	25172.2	3.651	-0.183
0.562	82196.1	11.921	25262.8	3.664	-0.182
0.621	82281.9	11.934	25353.5	3.677	-0.178
0.702	82448.6	11.958	25529.1	3.703	-0.170
0.769	82872.8	12.019	25672.0	3.723	-0.153
0.846	82858.6	12.017	25865.0	3.751	-0.152
0.924	84585.4	12.268	26089.5	3.784	-0.085
0.992	86215.6	12.504	26299.6	3.814	-0.022
FACE					
0.027	91986.4	13.341	25005.1	3.627	0.207
0.074	90578.1	13.187	24992.5	3.625	0.151
0.120	90077.9	13.064	24958.5	3.620	0.131
0.166	89784.5	13.022	24968.7	3.621	0.120
0.213	89706.4	13.010	24945.1	3.618	0.117
0.258	89904.6	13.039	24963.8	3.621	0.124
0.305	88914.0	12.895	24982.9	3.623	0.085
0.402	89724.9	13.013	25049.5	3.633	0.117
0.497	89485.4	12.971	25159.3	3.649	0.105
0.600	89231.2	12.941	25300.7	3.669	0.096
0.660	89428.9	12.970	25405.5	3.685	0.103
0.727	89500.2	12.980	25553.3	3.706	0.106
0.793	88983.7	12.906	25716.8	3.730	0.085
0.857	89677.4	13.006	25890.9	3.755	0.111
0.925	89818.6	13.027	26088.6	3.784	0.116
0.983	86918.2	12.605	26280.2	3.811	0.004

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.20    ADV. RATIO: 0.878  
POWER COEFF: 0.099    RECORD NO: 172.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 172.0

WIND TUNNEL:

STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	87040.0 PA	12.624 PSI
AIR DENSITY:	1.0676 KG/M3	0.06665 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1103.48 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.57 M/S	221.70 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1670.0	
ADVANCE RATIO:	0.878	
POWER COEFFICIENT:	0.099	
BLADE ANGLE (@ X=41" STA):	26.8 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3820 M	54.41 IN.
RADIUS RATIO (@ MID CHORD):	0.904	
REL MACH NO. (@ MID CHORD):	0.677	

RUN DATE:	08-12-1987
RUN TIME:	20:24:54

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 172.0

RADIAL STATION: 8

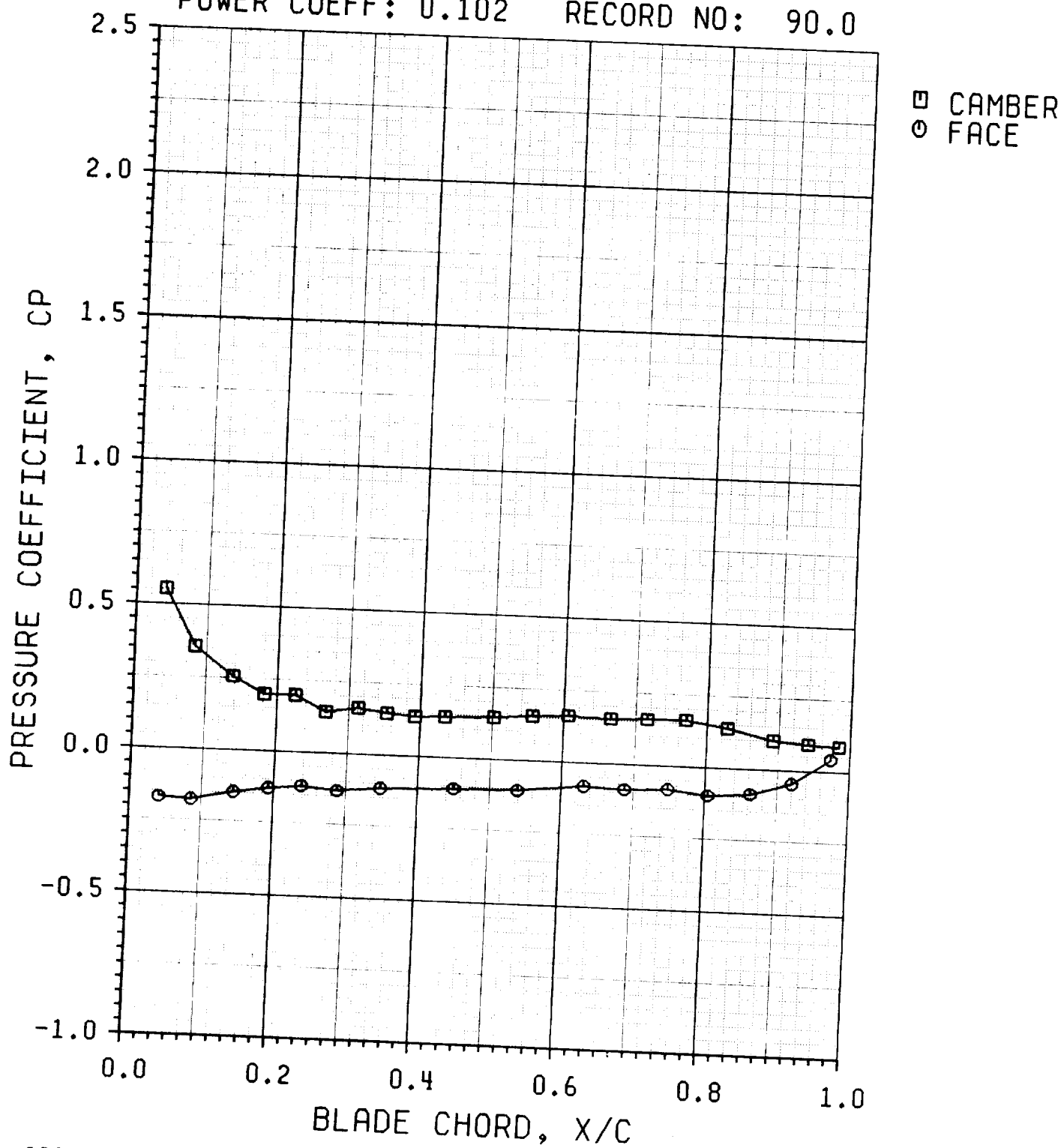
TUNNEL STATIC PRESSURE, PO: 87040.0 PA, 12.624 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	79141.7	11.478	27294.8	3.959	-0.289
0.067	79206.5	11.488	27295.4	3.959	-0.287
0.101	81858.7	11.872	27296.3	3.959	-0.190
0.133	81910.7	11.880	27302.9	3.960	-0.188
0.168	82677.3	11.991	27827.5	3.963	-0.160
0.203	82543.1	11.971	27331.1	3.964	-0.165
0.235	82982.0	12.035	27339.1	3.965	-0.148
0.273	82747.6	12.001	27372.5	3.970	-0.157
0.312	82832.6	12.013	27403.9	3.974	-0.154
0.344	82634.2	11.985	27427.1	3.978	-0.161
0.408	82601.0	11.980	27489.0	3.987	-0.161
0.474	82500.7	11.965	27557.8	3.997	-0.165
0.543	82477.0	11.962	27639.6	4.009	-0.165
0.605	82326.4	11.940	27743.5	4.024	-0.170
0.670	82620.1	11.983	27848.9	4.039	-0.159
0.734	82772.4	12.005	27960.6	4.055	-0.153
0.797	82675.0	11.991	28101.5	4.076	-0.155
0.857	83243.7	12.073	28212.0	4.092	-0.135
0.923	84432.4	12.245	28386.3	4.117	-0.092
0.984	85382.7	12.383	28521.7	4.137	-0.058
FACE					
0.033	90483.1	13.123	27279.2	3.956	0.126
0.079	91227.2	13.231	27280.3	3.957	0.153
0.124	90382.9	13.108	27297.6	3.959	0.122
0.172	90596.6	13.139	27800.2	3.959	0.130
0.221	90614.4	13.142	27308.4	3.961	0.131
0.264	89470.6	12.976	27338.3	3.965	0.089
0.315	89993.1	13.052	27373.1	3.970	0.108
0.414	90078.6	13.064	27464.7	3.988	0.111
0.509	89933.4	13.043	27573.4	3.999	0.105
0.611	89907.2	13.039	27726.2	4.021	0.103
0.679	89751.0	13.017	27834.2	4.037	0.097
0.740	89578.2	12.992	27944.4	4.053	0.091
0.796	89491.4	12.979	28057.9	4.069	0.087
0.860	90219.0	13.085	28197.4	4.090	0.113
0.922	89168.1	12.932	28366.2	4.114	0.075
0.979	86934.0	12.608	28509.9	4.135	-0.004

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.20 ADV. RATIO: 0.885

POWER COEFF: 0.102 RECORD NO: 90.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 90.0

## WIND TUNNEL:

STATIC TEMPERATURE:	289.0 K	60.5 F
STATIC PRESSURE:	86660.0 PA	12.569 PSI
AIR DENSITY:	1.0445 KG/M3	0.06521 LBF/FT3
SPEED OF SOUND:	340.81 M/S	1118.19 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	68.16 M/S	223.64 FT/S

## PROPFAN:

RADIAL STATION:	9	
ROTOR SPEED (RPM):	1673.0	
ADVANCE RATIO:	0.885	
POWER COEFFICIENT:	0.102	
BLADE ANGLE (@ X=41" STA):	27.3 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3819 M	54.40 IN.
RADIUS RATIO (@ MID CHORD):	0.938	
REL MACH NO. (@ MID CHORD):	0.696	

RUN DATE:	03-10-1987
RUN TIME:	15:02:15

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 90.0

RADIAL STATION: 9

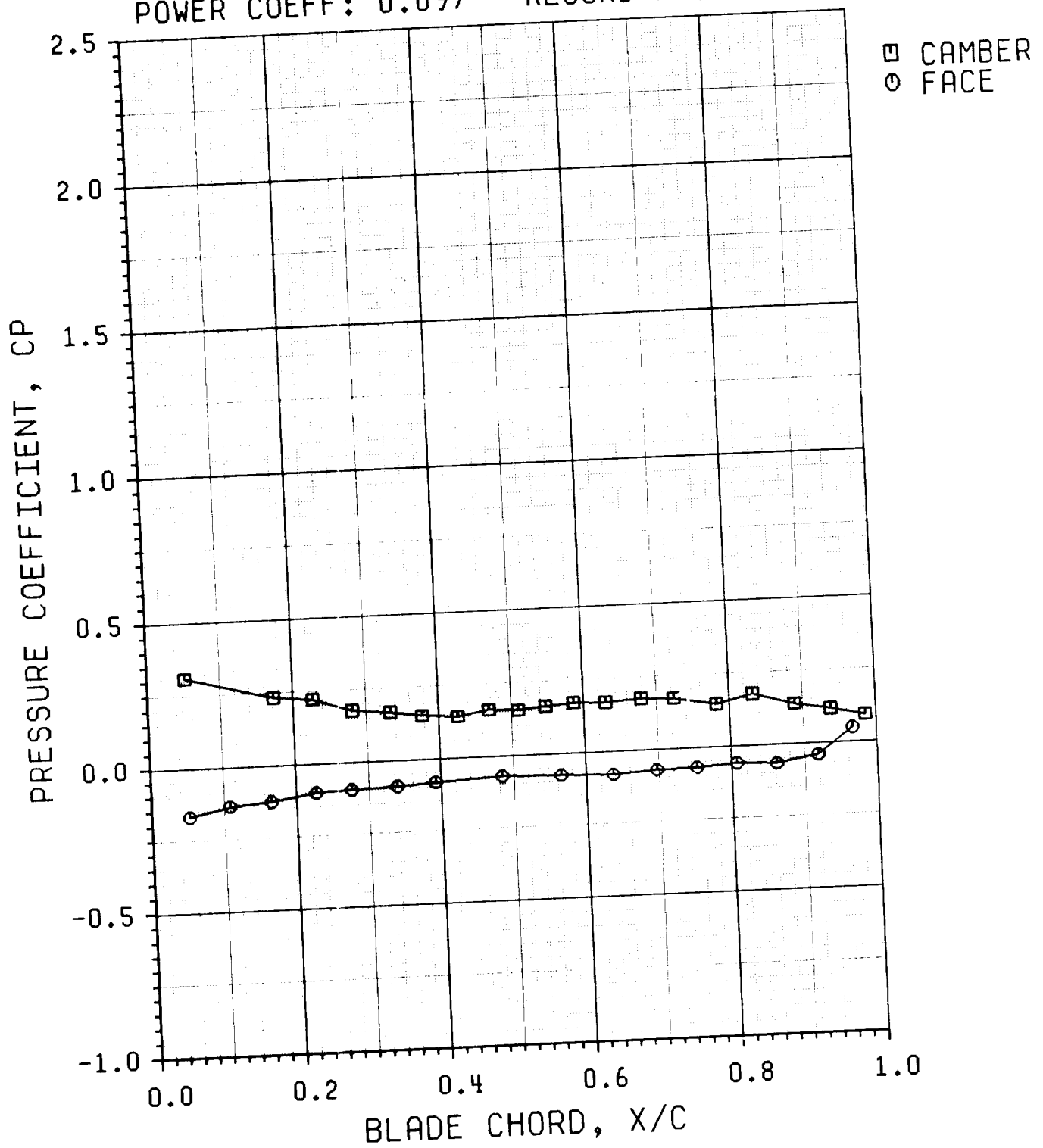
TUNNEL STATIC PRESSURE, PO: 86660.0 PA, 12.569 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	70675.1	10.250	28893.7	4.191	-0.553
0.084	76385.4	11.078	28917.2	4.194	-0.355
0.188	79251.0	11.494	28939.2	4.197	-0.256
0.182	80922.8	11.786	28954.8	4.199	-0.198
0.225	80916.4	11.736	28988.0	4.204	-0.198
0.268	82499.5	11.965	28997.8	4.206	-0.143
0.318	82027.7	11.897	29033.8	4.211	-0.160
0.353	82456.3	11.959	29060.7	4.215	-0.145
0.392	82679.2	11.991	29097.8	4.220	-0.137
0.434	82586.9	11.978	29129.0	4.225	-0.140
0.502	82484.5	11.956	29195.6	4.234	-0.145
0.556	82125.5	11.911	29256.0	4.248	-0.155
0.606	81947.6	11.885	29326.3	4.253	-0.161
0.665	82086.9	11.905	29384.1	4.262	-0.156
0.716	81985.0	11.891	29455.4	4.272	-0.159
0.770	81897.5	11.878	29522.3	4.282	-0.161
0.828	82591.7	11.978	29617.8	4.296	-0.137
0.892	83685.6	12.137	29714.8	4.310	-0.100
0.941	83940.7	12.174	29792.9	4.321	-0.091
0.984	84098.0	12.197	29857.6	4.330	-0.086
FACE					
0.041	91603.5	13.285	28889.0	4.190	0.171
0.086	91783.4	13.312	28908.6	4.193	0.177
0.144	90928.5	13.188	28923.4	4.195	0.148
0.192	90427.6	13.115	28945.8	4.198	0.130
0.238	90115.1	13.070	28969.4	4.202	0.119
0.288	90456.5	13.119	29000.4	4.206	0.131
0.348	90053.9	13.061	29045.8	4.213	0.117
0.450	89833.7	13.029	29122.9	4.224	0.109
0.539	89756.1	13.018	29229.1	4.239	0.106
0.631	89064.3	12.917	29323.8	4.253	0.082
0.688	89266.1	12.947	29401.0	4.264	0.089
0.748	89070.3	12.918	29476.1	4.275	0.082
0.804	89592.4	12.994	29571.1	4.289	0.099
0.863	89303.7	12.952	29657.2	4.301	0.089
0.920	88075.4	12.774	29749.0	4.315	0.048
0.973	85424.8	12.389	29840.5	4.328	-0.041

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10    MACH NO: 0.20    ADV. RATIO: 0.879  
POWER COEFF: 0.097    RECORD NO: 150.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 150.0

WIND TUNNEL:

STATIC TEMPERATURE:	291.0 K	64.1 F
STATIC PRESSURE:	86920.0 PA	12.606 PSI
AIR DENSITY:	1.0405 KG/M3	0.06496 LBF/FT3
SPEED OF SOUND:	341.99 M/S	1122.05 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	68.40 M/S	224.41 FT/S

PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1689.0	
ADVANCE RATIO:	0.879	
POWER COEFFICIENT:	0.097	
BLADE ANGLE (@ X=41" STA):	26.4 DEG.	
BLADE CHORD:	0.2064 M	8.18 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3821 M	54.41 IN.
RADIUS RATIO (@ MID CHORD):	0.964	
REL MACH NO. (@ MID CHORD):	0.718	

RUN DATE:	03-12-1987
RUN TIME:	14:06:36

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 150.0

RADIAL STATION: 10

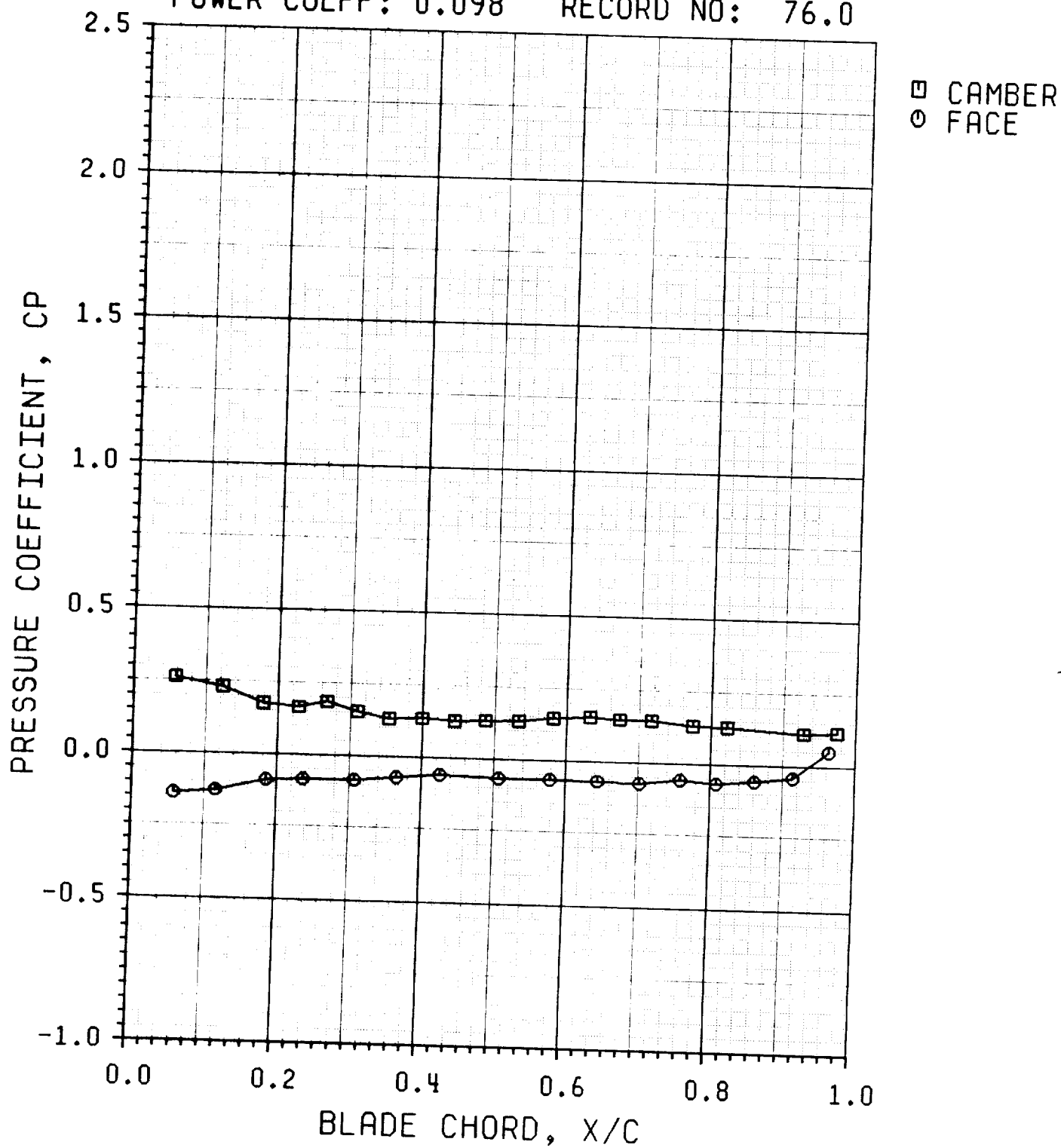
TUNNEL STATIC PRESSURE, PO: 86920.0 PA, 12.606 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	77355.0	11.219	30970.6	4.492	-0.309
0.113	*****	*****	81004.9	4.497	*****
0.178	79721.7	11.562	31024.8	4.500	-0.232
0.227	80049.9	11.610	31048.8	4.503	-0.221
0.281	81411.6	11.807	31079.9	4.508	-0.177
0.333	81772.4	11.860	31127.2	4.514	-0.165
0.377	82273.4	11.932	31139.7	4.516	-0.149
0.426	82528.7	11.969	31181.0	4.522	-0.141
0.469	81961.2	11.887	31225.7	4.529	-0.159
0.509	82097.8	11.907	31248.3	4.532	-0.154
0.547	81851.4	11.871	31282.4	4.537	-0.162
0.586	81566.9	11.830	31327.5	4.544	-0.171
0.630	81657.0	11.843	31351.7	4.547	-0.168
0.679	81437.9	11.811	31405.4	4.555	-0.175
0.724	81542.2	11.826	31454.9	4.562	-0.171
0.782	82357.3	11.944	31512.5	4.570	-0.145
0.832	81402.9	11.806	31578.5	4.579	-0.175
0.889	82604.2	11.980	31640.6	4.589	-0.136
0.938	83280.4	12.078	31711.9	4.599	-0.115
0.985	84026.5	12.187	31764.5	4.607	-0.091
FACE					
0.052	92186.8	13.370	30944.3	4.488	0.170
0.108	91236.2	13.232	30968.9	4.492	0.139
0.165	90874.6	13.180	30998.4	4.496	0.128
0.227	90089.7	13.066	31026.6	4.500	0.102
0.276	89929.1	13.043	31047.2	4.503	0.097
0.339	89792.6	13.023	31082.1	4.508	0.092
0.392	89523.3	12.984	31118.5	4.513	0.084
0.484	89152.1	12.930	31196.2	4.524	0.072
0.565	89340.4	12.957	31267.2	4.535	0.077
0.637	89497.9	12.980	31326.9	4.543	0.082
0.697	89188.2	12.935	31390.5	4.553	0.072
0.752	89110.6	12.924	31465.0	4.563	0.070
0.807	88816.8	12.881	31516.8	4.571	0.060
0.862	88998.7	12.908	31591.0	4.582	0.066
0.919	88210.7	12.793	31669.7	4.593	0.041
0.967	85418.2	12.388	31725.5	4.601	-0.047

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11 MACH NO: 0.20 ADV. RATIO: 0.879

POWER COEFF: 0.098 RECORD NO: 76.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 76.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	86620.0 PA	12.563 PSI
AIR DENSITY:	1.0662 KG/M3	0.06656 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.45 M/S	221.30 FT/S

## PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1665.0	
ADVANCE RATIO:	0.879	
POWER COEFFICIENT:	0.098	
BLADE ANGLE (@ X=41" STA):	25.9 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3823 M	54.42 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.725	

RUN DATE:	03-09-1987
RUN TIME:	21:15:51

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 76.0

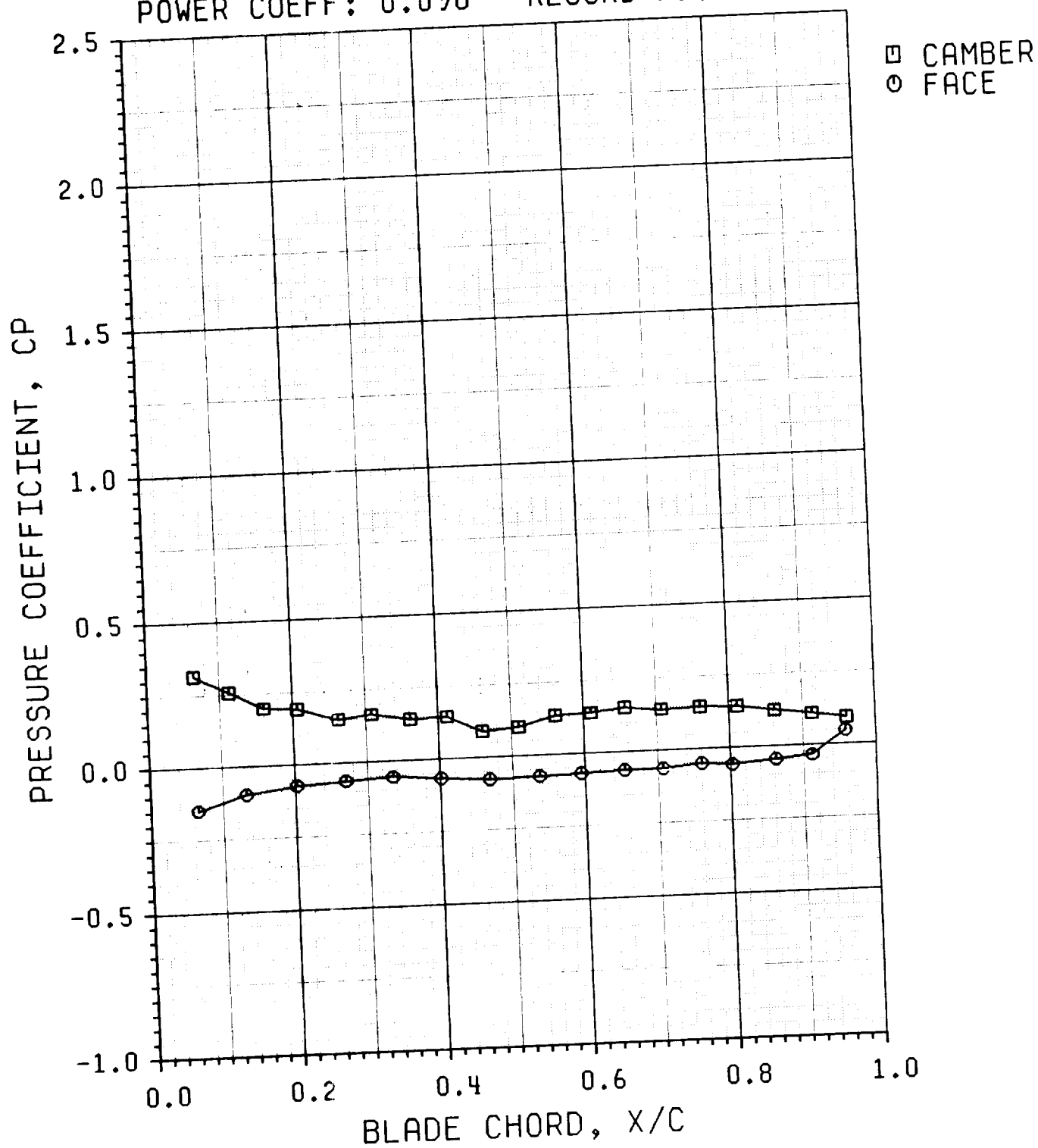
RADIAL STATION: 11

TUNNEL STATIC PRESSURE, PO: 86620.0 PA, 12.568 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	78389.8	11.369	81507.1	4.570	-0.261
0.123	79370.7	11.511	81556.5	4.577	-0.280
0.179	81075.3	11.759	81593.8	4.582	-0.175
0.228	81449.3	11.818	81621.8	4.586	-0.164
0.267	80788.5	11.717	81648.6	4.590	-0.184
0.309	81785.6	11.862	81660.9	4.592	-0.158
0.353	82508.5	11.966	81689.5	4.596	-0.130
0.399	82354.3	11.944	81720.4	4.601	-0.134
0.444	82551.2	11.973	81754.5	4.605	-0.128
0.487	82462.2	11.960	81793.1	4.611	-0.181
0.533	82387.7	11.949	81837.0	4.617	-0.183
0.581	81990.7	11.891	81877.9	4.623	-0.145
0.632	81730.6	11.854	81920.4	4.630	-0.153
0.678	81952.4	11.886	81960.2	4.635	-0.146
0.717	81968.6	11.888	81987.7	4.639	-0.145
0.774	82455.3	11.959	82050.6	4.648	-0.180
0.822	82536.1	11.970	82094.7	4.655	-0.127
0.875	*****	*****	82145.9	4.662	*****
0.928	83043.4	12.044	82228.8	4.674	-0.111
0.974	82890.7	12.022	82272.6	4.681	-0.116
FACE					
0.058	91039.3	13.204	31501.4	4.569	0.140
0.116	90677.2	13.151	31533.3	4.573	0.129
0.185	89466.5	12.976	31556.8	4.577	0.090
0.236	89314.6	12.954	31596.7	4.583	0.085
0.307	89323.3	12.955	31633.3	4.588	0.085
0.365	88926.2	12.897	31669.9	4.593	0.073
0.425	88534.9	12.840	31712.6	4.599	0.060
0.507	88789.8	12.877	31763.2	4.607	0.068
0.578	88763.1	12.874	31831.5	4.617	0.067
0.644	88806.7	12.880	31893.0	4.626	0.069
0.702	88912.7	12.895	31939.7	4.632	0.072
0.758	88434.2	12.826	32002.7	4.641	0.057
0.808	88761.5	12.873	32057.1	4.649	0.067
0.861	88467.6	12.831	32111.5	4.657	0.058
0.914	87993.2	12.762	32170.4	4.666	0.043
0.963	84998.2	12.828	32228.6	4.674	-0.050

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.20    ADV. RATIO: 0.879  
POWER COEFF: 0.098    RECORD NO: 121.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 121.0

WIND TUNNEL:

STATIC TEMPERATURE:	285.0 K	53.8 F
STATIC PRESSURE:	86710.0 PA	12.576 PSI
AIR DENSITY:	1.0598 KG/M3	0.06616 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.48 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.69 M/S	222.09 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1672.0	
ADVANCE RATIO:	0.879	
POWER COEFFICIENT:	0.098	
BLADE ANGLE (@ X=41" STA):	27.4 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3818 M	54.40 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.733	

RUN DATE:	03-11-1987
RUN TIME:	17:07:51



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 121.0

RADIAL STATION: 12

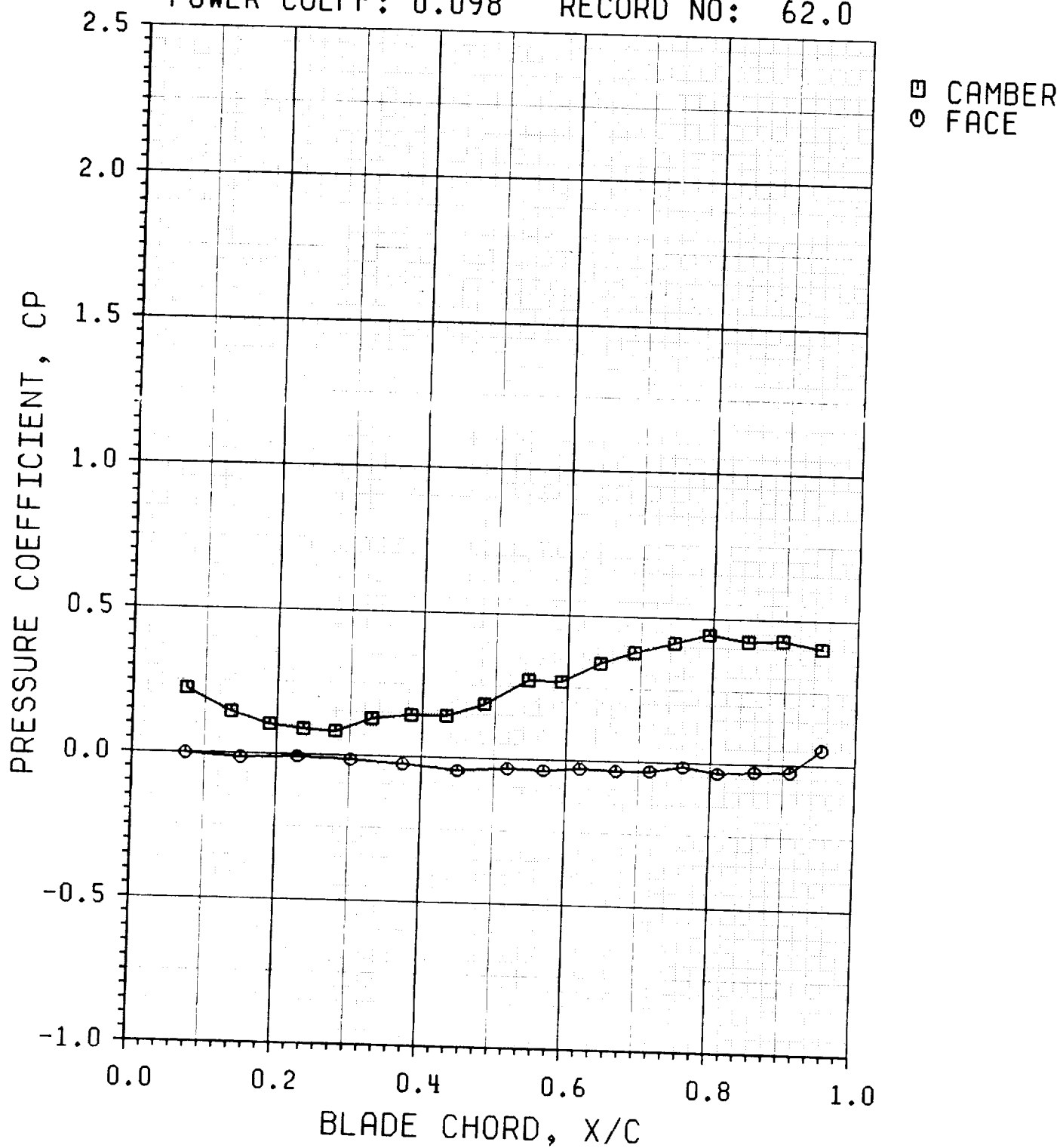
TUNNEL STATIC PRESSURE, PO: 86710.0 PA, 12.576 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	76542.5	11.101	32279.9	4.682	-0.315
0.113	78364.2	11.865	32314.9	4.687	-0.258
0.160	80268.2	11.642	32342.5	4.691	-0.199
0.206	80451.3	11.668	32361.5	4.698	-0.193
0.262	81803.2	11.864	32390.7	4.698	-0.151
0.308	81379.4	11.803	32406.3	4.700	-0.164
0.361	82065.3	11.902	32451.5	4.707	-0.143
0.412	81956.7	11.886	32470.6	4.709	-0.146
0.460	83780.6	12.151	32491.6	4.712	-0.090
0.510	83464.2	12.105	32537.7	4.719	-0.100
0.561	82297.6	11.936	32583.4	4.726	-0.135
0.610	82177.6	11.918	32631.9	4.733	-0.139
0.657	81711.7	11.851	32655.8	4.736	-0.153
0.707	82090.9	11.906	32695.1	4.742	-0.141
0.760	81950.7	11.886	32733.0	4.747	-0.145
0.811	82060.1	11.901	32776.3	4.754	-0.142
0.862	82649.8	11.987	32820.1	4.760	-0.124
0.913	83138.4	12.057	32875.2	4.768	-0.109
0.960	83645.2	12.131	32918.4	4.774	-0.093
FACE					
0.065	91533.6	13.275	32270.0	4.680	0.149
0.132	89861.2	13.033	32308.2	4.686	0.098
0.202	89118.5	12.925	32333.6	4.689	0.074
0.270	88767.3	12.874	32371.0	4.695	0.064
0.335	88538.9	12.841	32404.8	4.700	0.056
0.401	88907.9	12.895	32441.6	4.705	0.068
0.468	89204.5	12.938	32483.6	4.711	0.077
0.537	89128.7	12.927	32523.7	4.717	0.074
0.594	88988.6	12.906	32577.4	4.725	0.070
0.654	88815.9	12.881	32618.5	4.731	0.065
0.707	88822.6	12.882	32672.6	4.739	0.065
0.760	88422.6	12.824	32711.6	4.744	0.052
0.802	88665.7	12.859	32739.0	4.748	0.060
0.862	88299.5	12.806	32802.1	4.757	0.048
0.912	87895.9	12.748	32838.3	4.763	0.036
0.958	85116.2	12.345	32889.4	4.770	-0.048

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13 MACH NO: 0.20 ADV. RATIO: 0.881

POWER COEFF: 0.098 RECORD NO: 62.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 62.0

WIND TUNNEL:

STATIC TEMPERATURE:	285.0 K	53.3 F
STATIC PRESSURE:	86370.0 PA	12.526 PSI
AIR DENSITY:	1.0557 KG/M3	0.06590 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.69 M/S	222.09 FT/S

PROPFAN:

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1668.0	
ADVANCE RATIO:	0.881	
POWER COEFFICIENT:	0.098	
BLADE ANGLE (@ X=41" STA):	26.5 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3821 M	54.41 IN.
RADIUS RATIO (@ MID CHORD):	0.996	
REL MACH NO. (@ MID CHORD):	0.738	

RUN DATE:	03-09-1987
RUN TIME:	16:37:19

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 62.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 86370.0 PA, 12.526 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	79141.6	11.478	32701.5	4.743	-0.221
0.136	81738.0	11.855	32734.5	4.748	-0.142
0.189	83068.2	12.048	32732.7	4.747	-0.101
0.236	83526.0	12.114	32760.5	4.751	-0.087
0.280	83717.7	12.142	32786.4	4.755	-0.081
0.330	82169.1	11.917	32796.5	4.757	-0.128
0.384	81720.7	11.852	32830.2	4.761	-0.142
0.433	81659.4	11.843	32858.7	4.766	-0.143
0.485	80262.2	11.641	32875.1	4.768	-0.186
0.545	77381.9	11.223	32912.3	4.773	-0.273
0.591	77488.2	11.288	32943.3	4.778	-0.270
0.644	75251.7	10.914	32968.2	4.781	-0.337
0.691	73919.2	10.721	32994.8	4.785	-0.377
0.746	72731.2	10.548	33030.5	4.791	-0.413
0.794	71685.6	10.397	33073.2	4.797	-0.444
0.848	72363.4	10.495	33107.8	4.802	-0.423
0.896	72195.7	10.471	33142.5	4.807	-0.428
0.950	72999.7	10.587	33185.7	4.813	-0.403
FACE					
0.074	86468.2	12.541	32675.5	4.739	0.003
0.150	86867.2	12.599	32702.4	4.743	0.015
0.229	86650.0	12.567	32749.8	4.750	0.009
0.302	86892.2	12.602	32766.1	4.752	0.016
0.374	87264.6	12.656	32805.0	4.758	0.027
0.450	87882.2	12.746	32843.6	4.763	0.046
0.519	87527.7	12.694	32871.3	4.767	0.035
0.569	87666.3	12.714	32901.5	4.772	0.039
0.619	87357.1	12.670	32935.3	4.777	0.030
0.669	87531.1	12.695	32971.4	4.782	0.035
0.716	87503.6	12.691	33002.5	4.786	0.034
0.762	86903.1	12.604	33080.6	4.791	0.016
0.810	87566.9	12.700	33055.2	4.794	0.036
0.861	87336.9	12.667	33080.6	4.798	0.029
0.910	87268.4	12.657	33139.3	4.806	0.027
0.953	84639.6	12.276	33157.9	4.809	-0.052

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B6  
(B6.1 through B6.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.200 \pm 0.001$

Advance Ratio,  $J = 0.883 \pm 0.009$

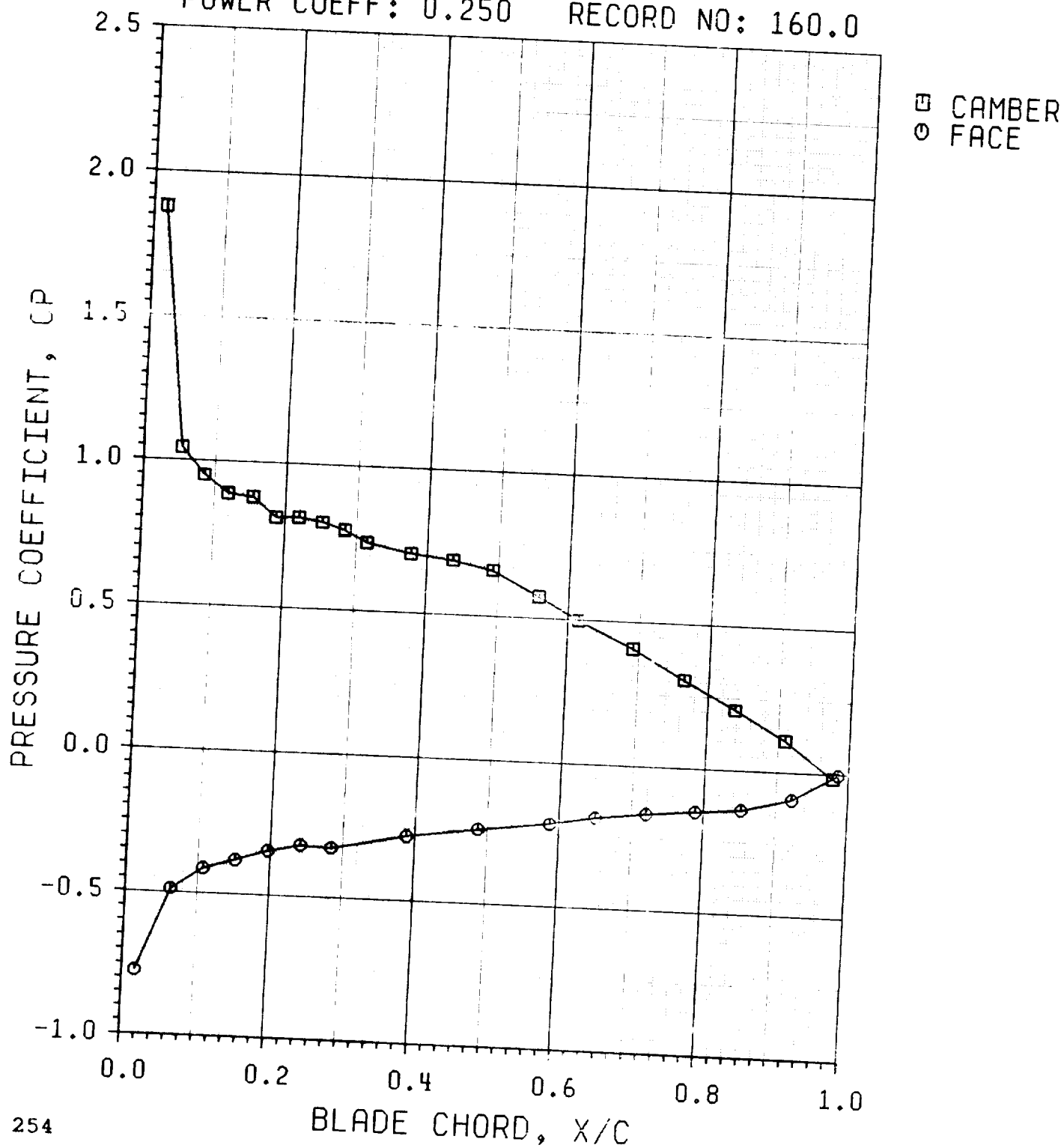
Power Coefficient,  $CP = 0.250 \pm 0.001$

Blade Angle,  $\beta = 31.3 \pm 0.9^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.20 ADV. RATIO: 0.881

POWER COEFF: 0.250 RECORD NO: 160.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 160.0

## WIND TUNNEL:

STATIC TEMPERATURE:	285.0 K	53.3 F
STATIC PRESSURE:	86870.0 PA	12.599 PSI
AIR DENSITY:	1.0618 KG/M3	0.06629 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.69 M/S	222.09 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1670.0	
ADVANCE RATIO:	0.881	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	30.5 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3808 M	54.36 IN.
RADIUS RATIO (@ MID CHORD):	0.323	
REL MACH NO. (@ MID CHORD):	0.305	

RUN DATE:	03-12-1987
RUN TIME:	16:52:33

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 160.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, PO: 86870.0 PA, 12.599 PSI

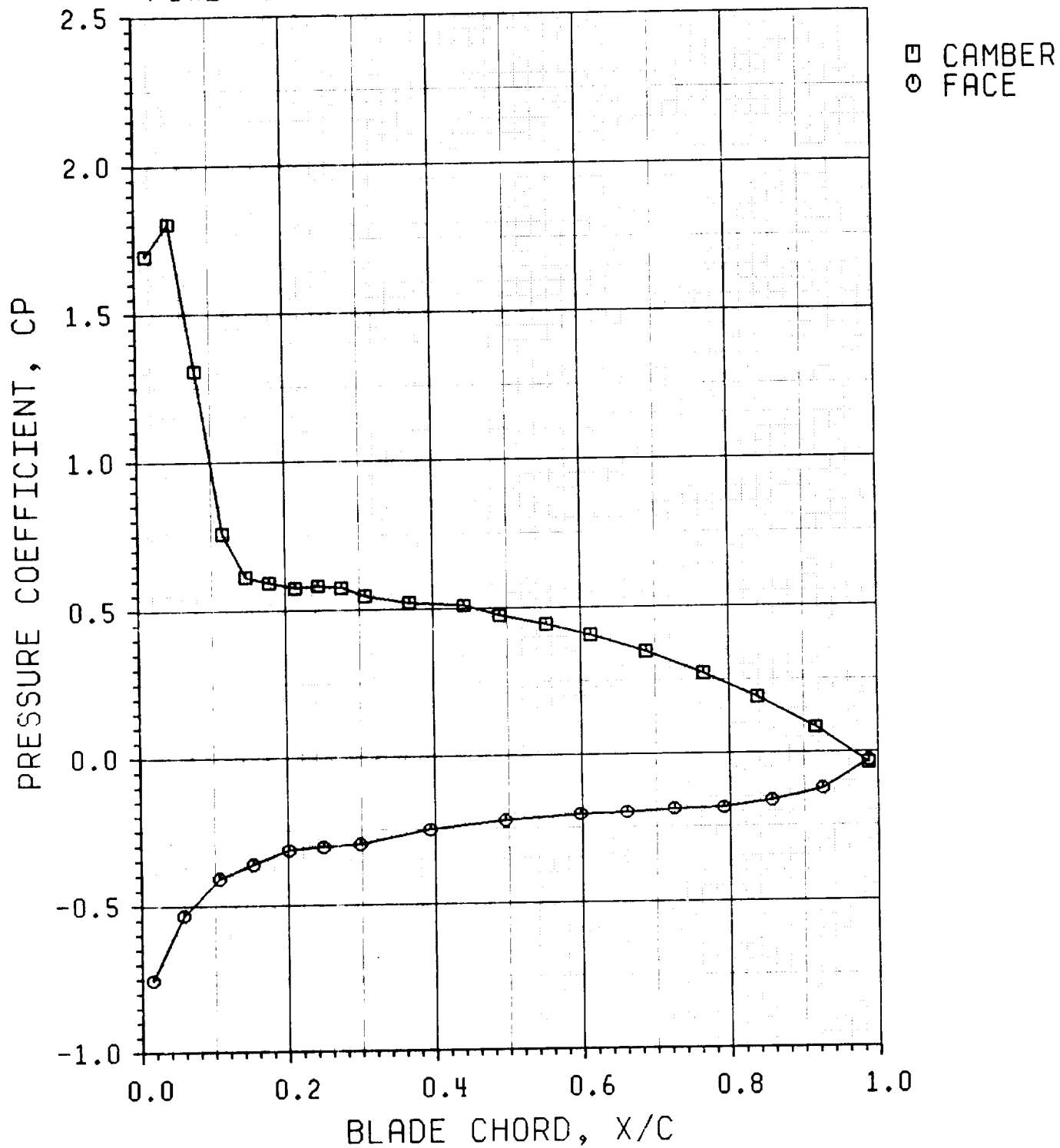
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	77438.8	11.231	5024.5	0.729	-1.877
0.053	81649.0	11.842	5006.8	0.726	-1.048
0.085	82133.4	11.912	4993.4	0.724	-0.949
0.119	82442.1	11.957	4989.3	0.724	-0.887
0.154	82490.4	11.964	4987.9	0.723	-0.878
0.187	82825.0	12.012	4996.2	0.725	-0.810
0.219	82800.0	12.009	5007.3	0.726	-0.813
0.252	82861.6	12.018	5019.8	0.728	-0.799
0.284	82963.3	12.032	5036.9	0.731	-0.776
0.315	83151.8	12.060	5062.7	0.734	-0.735
0.377	83275.2	12.078	5117.8	0.742	-0.702
0.436	83309.6	12.083	5190.8	0.753	-0.686
0.492	83433.1	12.101	5237.7	0.760	-0.656
0.558	83794.1	12.153	5368.5	0.779	-0.573
0.615	84152.5	12.205	5473.5	0.794	-0.496
0.692	84579.2	12.267	5618.6	0.815	-0.408
0.765	85099.9	12.342	5792.5	0.840	-0.306
0.838	85626.6	12.419	5963.4	0.865	-0.209
0.910	86192.2	12.501	6157.4	0.893	-0.110
0.978	86981.8	12.615	6349.6	0.921	0.018
FACE					
0.018	90797.1	13.169	5061.4	0.734	0.776
0.063	89358.7	12.960	5086.3	0.738	0.489
0.107	88981.4	12.905	5092.7	0.739	0.415
0.151	88814.7	12.881	5096.5	0.739	0.382
0.196	88649.6	12.857	5109.0	0.741	0.348
0.241	88529.1	12.840	5123.4	0.743	0.324
0.284	88558.6	12.844	5138.2	0.745	0.329
0.388	88316.6	12.809	5208.1	0.755	0.278
0.487	88165.5	12.787	5311.8	0.770	0.244
0.587	88046.0	12.770	5447.2	0.790	0.216
0.650	87913.8	12.750	5542.3	0.804	0.188
0.720	87822.2	12.737	5671.0	0.822	0.168
0.788	87756.7	12.728	5818.7	0.844	0.152
0.852	87703.1	12.720	5971.7	0.866	0.140
0.922	87470.9	12.686	6155.0	0.893	0.098
0.985	86901.6	12.604	6341.5	0.920	0.005

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.20    ADV. RATIO: 0.884

POWER COEFF: 0.251    RECORD NO: 213.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 213.0

## WIND TUNNEL:

STATIC TEMPERATURE:	280.0 K	44.8 F
STATIC PRESSURE:	86430.0 PA	12.535 PSI
AIR DENSITY:	1.0753 KG/M3	0.06713 LBF/FT3
SPEED OF SOUND:	835.46 M/S	1100.64 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.09 M/S	220.13 FT/S

## PROPFAN:

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1649.0	
ADVANCE RATIO:	0.884	
POWER COEFFICIENT:	0.251	
BLADE ANGLE (@ X=41" STA):	30.9 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3807 M	54.86 IN.
RADIUS RATIO (@ MID CHORD):	0.459	
REL MACH NO. (@ MID CHORD):	0.382	

RUN DATE:	08-18-1987
RUN TIME:	23:07:54

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 218.0

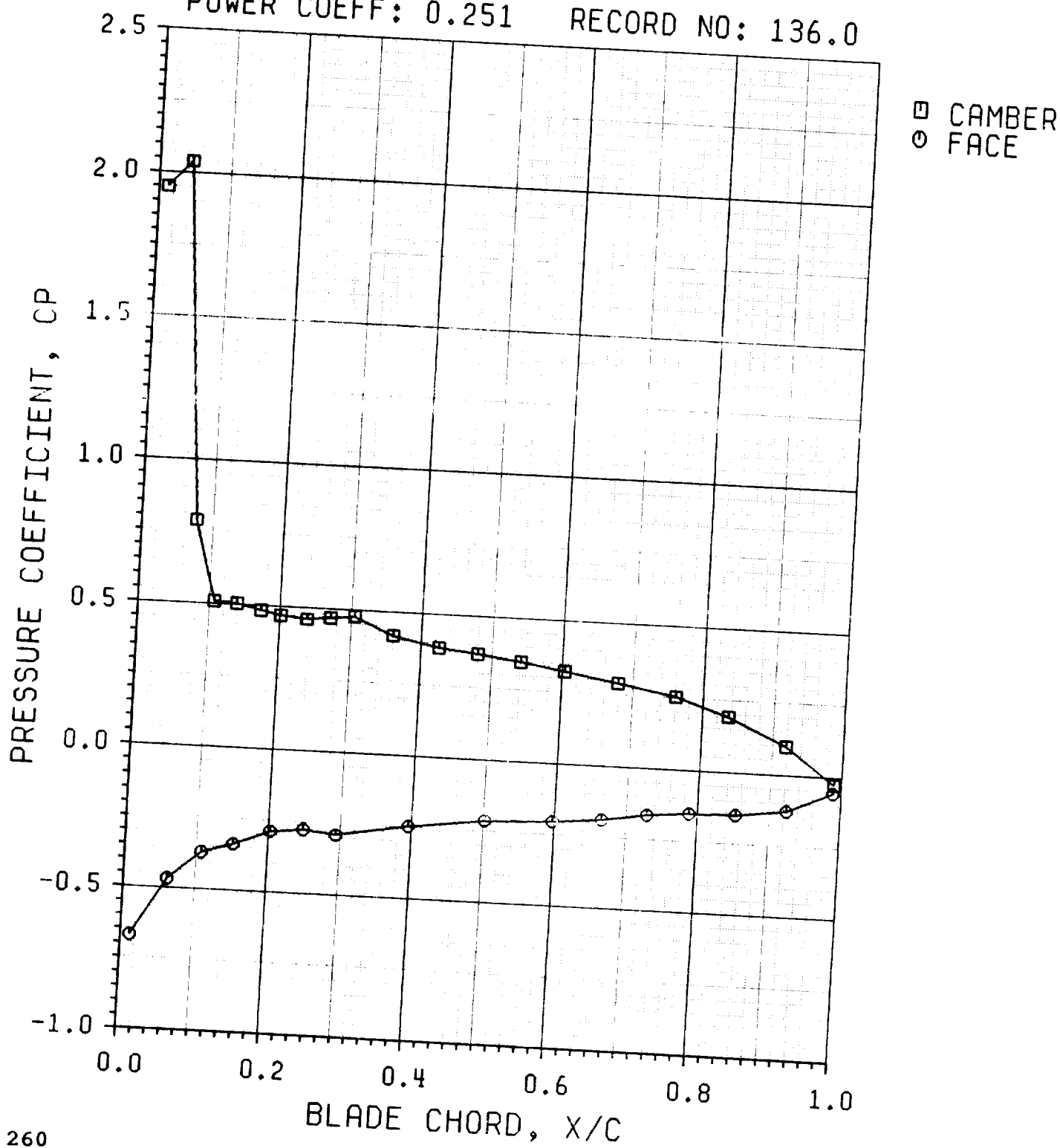
RADIAL STATION: 2

TUNNEL STATIC PRESSURE, PO: 86480.0 PA, 12.535 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	72280.9	10.483	8348.2	1.211	-1.695
0.046	71458.2	10.364	8300.0	1.204	-1.804
0.080	75656.9	10.973	8248.5	1.196	-1.806
0.115	80210.6	11.633	8211.7	1.191	-0.757
0.146	81418.1	11.808	8181.2	1.187	-0.618
0.178	81628.9	11.839	8113.2	1.177	-0.592
0.213	81768.8	11.858	8131.2	1.179	-0.574
0.244	81709.2	11.850	8120.2	1.178	-0.581
0.276	81772.8	11.860	8109.5	1.176	-0.574
0.308	82010.4	11.894	8111.6	1.176	-0.545
0.368	82200.5	11.922	8125.7	1.178	-0.521
0.442	82284.6	11.934	8152.1	1.182	-0.509
0.490	82583.6	11.970	8212.2	1.191	-0.474
0.553	82765.7	12.004	8285.3	1.202	-0.442
0.613	83038.1	12.043	8376.8	1.215	-0.405
0.688	83478.4	12.107	8511.6	1.234	-0.347
0.765	84067.5	12.193	8676.3	1.258	-0.272
0.838	84749.2	12.291	8865.2	1.286	-0.190
0.916	85667.3	12.425	9094.7	1.319	-0.084
0.987	86784.7	12.587	9817.7	1.351	0.038
FACE					
0.015	92756.2	13.453	8387.7	1.216	0.754
0.057	90882.2	13.181	8383.9	1.209	0.534
0.106	89824.1	13.027	8282.0	1.201	0.410
0.152	89426.4	12.970	8247.0	1.196	0.363
0.201	89023.9	12.911	8207.2	1.190	0.316
0.248	88937.9	12.899	8188.1	1.188	0.306
0.298	88858.9	12.887	8175.8	1.186	0.297
0.393	88484.5	12.833	8191.6	1.188	0.251
0.495	88271.8	12.802	8257.7	1.198	0.223
0.597	88187.8	12.783	8379.5	1.215	0.204
0.660	88117.9	12.780	8476.0	1.229	0.199
0.724	88056.4	12.771	8597.2	1.247	0.189
0.791	88057.4	12.771	8748.6	1.268	0.186
0.856	87874.2	12.745	8913.9	1.293	0.162
0.925	87557.9	12.699	9115.4	1.322	0.124
0.987	86706.7	12.575	9321.7	1.352	0.030

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.20    ADV. RATIO: 0.882  
POWER COEFF: 0.251    RECORD NO: 136.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 136.0

WIND TUNNEL:

STATIC TEMPERATURE:	282.0 K	47.9 F
STATIC PRESSURE:	86960.0 PA	12.612 PSI
AIR DENSITY:	1.0742 KG/M3	0.06706 LBF/FT3
SPEED OF SOUND:	336.66 M/S	1104.57 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.33 M/S	220.91 FT/S

PROPFAN:

RADIAL STATION:	3	
ROTOR SPEED (RPM):	1660.0	
ADVANCE RATIO:	0.882	
POWER COEFFICIENT:	0.251	
BLADE ANGLE (@ X=41" STA):	32.1 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3803 M	54.34 IN.
RADIUS RATIO (@ MID CHORD):	0.579	
REL MACH NO. (@ MID CHORD):	0.458	

RUN DATE:	08-11-1987
RUN TIME:	21:00:17

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 186.0

RADIAL STATION: 3

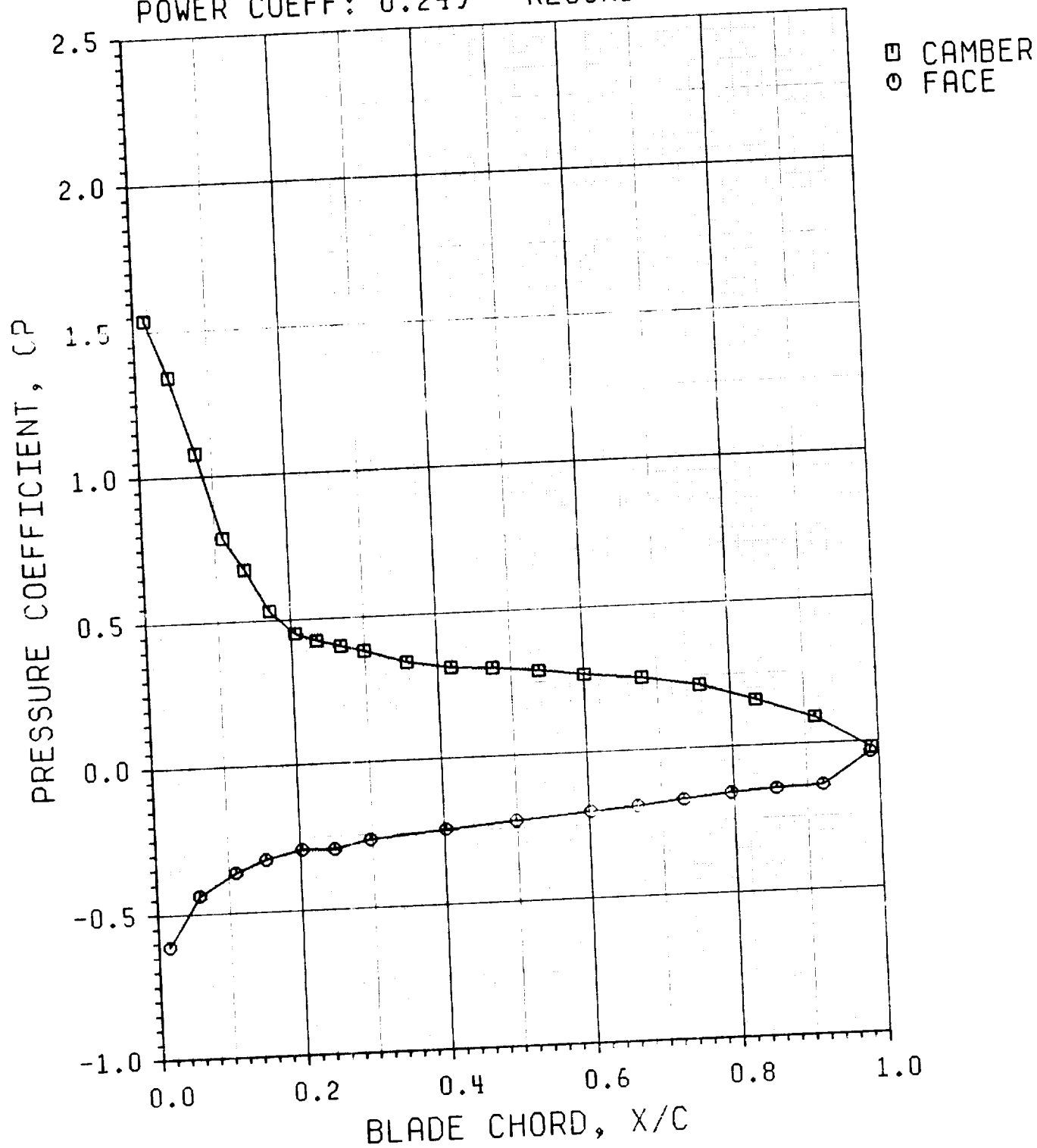
TUNNEL STATIC PRESSURE, PO: 86960.0 PA, 12.612 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	62856.6	9.116	12369.9	1.794	-1.949
0.046	61880.9	8.975	12302.8	1.784	-2.039
0.077	77342.5	11.217	12281.9	1.774	-0.786
0.107	80768.1	11.714	12181.2	1.767	-0.508
0.139	80871.3	11.729	12126.2	1.759	-0.502
0.178	81128.9	11.766	12072.0	1.751	-0.483
0.201	81338.4	11.796	12043.5	1.747	-0.467
0.238	81452.0	11.813	12005.7	1.741	-0.459
0.271	81854.6	11.799	11983.8	1.738	-0.468
0.305	81266.9	11.786	11972.8	1.786	-0.476
0.360	81984.6	11.890	11958.3	1.734	-0.416
0.425	82376.8	11.947	11974.4	1.737	-0.883
0.480	82544.9	11.972	11997.5	1.740	-0.868
0.541	82754.1	12.002	12071.8	1.751	-0.848
0.603	83040.9	12.044	12146.3	1.762	-0.823
0.679	83399.2	12.096	12294.9	1.788	-0.290
0.761	83814.4	12.156	12477.5	1.810	-0.252
0.836	84530.6	12.260	12689.1	1.840	-0.191
0.919	85691.9	12.428	12954.7	1.879	-0.098
0.989	87311.9	12.663	13212.3	1.916	0.027
FACE					
0.018	95306.0	13.822	12398.9	1.798	0.673
0.061	92742.4	13.451	12308.1	1.785	0.470
0.107	91517.4	13.273	12222.9	1.773	0.873
0.151	91090.8	13.211	12154.1	1.763	0.340
0.202	90455.2	13.119	12092.1	1.754	0.289
0.248	90318.7	13.098	12044.9	1.747	0.278
0.294	90458.7	13.119	12014.1	1.742	0.291
0.395	89936.4	13.044	11992.9	1.739	0.248
0.502	89535.0	12.985	12051.5	1.748	0.214
0.597	89455.2	12.974	12146.1	1.762	0.205
0.666	89286.0	12.949	12274.2	1.780	0.190
0.729	89005.1	12.909	12384.6	1.796	0.165
0.788	88875.6	12.890	12530.4	1.817	0.153
0.853	88870.4	12.889	12722.4	1.845	0.150
0.924	88613.9	12.852	12950.9	1.878	0.128
0.988	87709.9	12.721	13196.7	1.914	0.057

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4 MACH NO: 0.20 ADV. RATIO: 0.875

POWER COEFF: 0.249 RECORD NO: 200.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 200.0

WIND TUNNEL:

STATIC TEMPERATURE:	285.0 K	53.3 F
STATIC PRESSURE:	86460.0 PA	12.540 PSI
AIR DENSITY:	1.0568 KG/M3	0.06597 LBF/FT3
SPEED OF SOUND:	388.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.69 M/S	222.09 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1680.0	
ADVANCE RATIO:	0.875	
POWER COEFFICIENT:	0.249	
BLADE ANGLE (@ X=41" STA):	30.8 DEG.	
BLADE CHORD:	0.5676 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3807 M	54.86 IN.
RADIUS RATIO (@ MID CHORD):	0.675	
REL MACH NO. (@ MID CHORD):	0.524	

RUN DATE:	03-13-1987
RUN TIME:	17:59:27



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 200.0

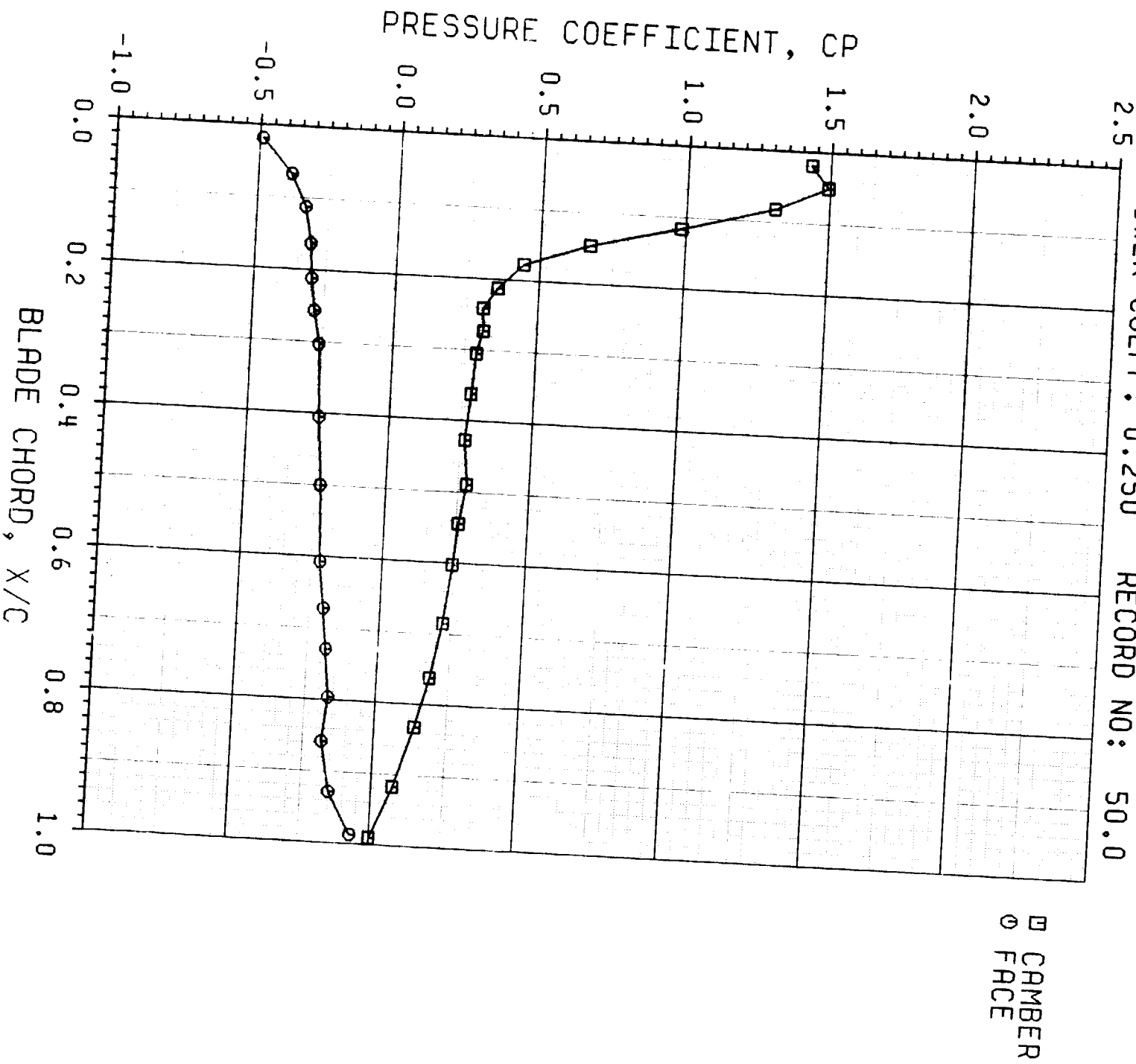
RADIAL STATION: 4

TUNNEL STATIC PRESSURE, PO: 86460.0 PA, 12.540 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	61683.2	8.939	16137.0	2.340	-1.538
0.046	64925.6	9.416	16066.6	2.380	-1.340
0.078	69286.9	10.042	15985.9	2.818	-1.077
0.111	73969.5	10.728	15917.2	2.309	-0.785
0.139	75771.3	10.989	15867.2	2.801	-0.674
0.171	78057.4	11.321	15811.9	2.293	-0.531
0.205	79344.3	11.508	15766.8	2.287	-0.451
0.234	79793.4	11.573	15730.5	2.281	-0.424
0.267	80142.6	11.623	15708.1	2.278	-0.402
0.299	80448.1	11.668	15682.0	2.274	-0.388
0.357	81157.6	11.771	15667.3	2.272	-0.338
0.418	81575.6	11.831	15675.9	2.274	-0.312
0.475	81662.1	11.844	15707.8	2.278	-0.305
0.538	81901.8	11.878	15774.2	2.288	-0.289
0.600	82190.0	11.920	15857.3	2.300	-0.269
0.679	82455.2	11.959	16017.3	2.323	-0.250
0.758	82936.2	12.028	16216.2	2.352	-0.217
0.834	83839.9	12.160	16456.2	2.387	-0.159
0.914	84942.4	12.319	16753.4	2.430	-0.091
0.990	86850.8	12.596	17065.8	2.475	0.023
FACE					
0.015	96379.5	13.978	16178.9	2.346	0.618
0.059	93511.7	13.562	16078.6	2.332	0.439
0.110	92272.6	13.883	15969.4	2.316	0.364
0.152	91580.7	13.282	15894.8	2.305	0.322
0.202	91085.9	13.210	15830.5	2.296	0.292
0.247	91110.9	13.214	15777.9	2.288	0.295
0.297	90669.7	13.150	15740.9	2.283	0.267
0.402	90293.6	13.096	15719.5	2.280	0.244
0.499	90011.6	13.055	15788.6	2.290	0.225
0.602	89719.1	13.012	15917.9	2.309	0.205
0.667	89542.6	12.987	16012.1	2.322	0.193
0.731	89306.7	12.952	16174.4	2.346	0.176
0.796	89085.1	12.920	16359.7	2.373	0.160
0.858	88958.1	12.902	16551.5	2.401	0.151
0.922	88883.1	12.891	16786.8	2.435	0.144
0.988	87091.5	12.631	17061.6	2.474	0.037

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.20 ADV. RATIO: 0.884  
POWER COEFF: 0.250 RECORD NO: 50.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 50.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	87030.0 PA	12.622 PSI
AIR DENSITY:	1.0789 KG/M3	0.06735 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.21 M/S	220.52 FT/S

## PROPFAN:

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RADIAL STATION:	5	
ROTOR SPEED (RPM):	1651.0	
ADVANCE RATIO:	0.884	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	30.4 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3809 M	54.36 IN.
RADIUS RATIO (@ MID CHORD):	0.742	
REL MACH NO. (@ MID CHORD):	0.564	

RUN DATE:	03-06-1987
RUN TIME:	17:08:52

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 50.0

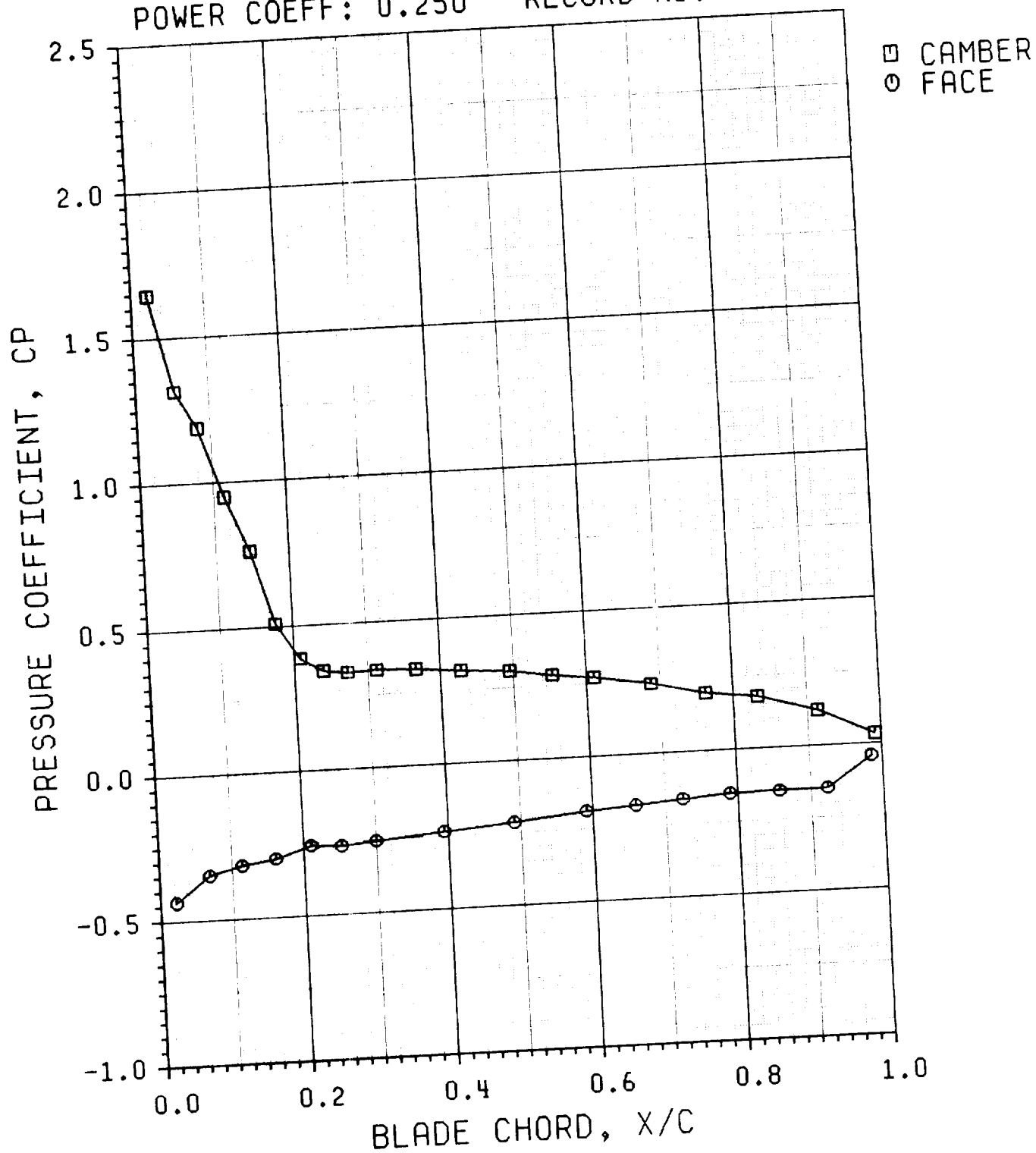
RADIAL STATION: 5

TUNNEL STATIC PRESSURE, P0: 87030.0 PA, 12.622 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	59971.2	8.698	18906.2	2.742	-1.481
0.050	58923.6	8.546	18835.6	2.782	-1.492
0.082	62460.6	9.059	18764.7	2.721	-1.809
0.116	68668.4	9.959	18704.8	2.713	-0.982
0.146	74535.4	10.810	18654.8	2.706	-0.670
0.177	78775.4	11.425	18612.5	2.699	-0.443
0.212	80483.5	11.665	18573.7	2.694	-0.855
0.241	81830.1	11.796	18547.4	2.690	-0.807
0.273	81275.6	11.788	18524.5	2.687	-0.811
0.305	81650.0	11.842	18508.1	2.684	-0.291
0.362	81868.7	11.874	18502.5	2.683	-0.279
0.427	82094.6	11.906	18522.1	2.586	-0.266
0.489	81844.2	11.870	18555.8	2.691	-0.279
0.544	82250.2	11.929	18616.8	2.700	-0.257
0.602	82465.6	11.960	18712.6	2.714	-0.244
0.685	82855.9	12.017	18869.6	2.737	-0.221
0.762	83519.8	12.118	19057.7	2.764	-0.184
0.832	84326.4	12.230	19262.1	2.794	-0.140
0.917	85577.9	12.412	19557.0	2.836	-0.074
0.990	87053.0	12.626	19840.5	2.878	0.001
FACE					
0.019	96325.0	13.970	18932.3	2.746	0.491
0.067	94250.1	13.669	18824.8	2.780	0.384
0.112	93217.5	13.520	18781.2	2.717	0.330
0.163	92741.1	13.450	18658.6	2.706	0.306
0.211	92556.4	13.424	18610.1	2.699	0.297
0.266	92277.2	13.383	18573.8	2.694	0.283
0.303	91873.6	13.325	18545.3	2.690	0.261
0.405	91599.4	13.285	18529.2	2.687	0.247
0.500	91831.2	13.246	18582.0	2.695	0.231
0.607	91124.1	13.216	18783.0	2.717	0.219
0.672	90782.7	13.166	18844.2	2.733	0.199
0.729	90525.6	13.129	18981.4	2.753	0.184
0.796	90220.4	13.085	19153.6	2.778	0.167
0.858	90577.9	13.137	19336.8	2.804	0.183
0.928	89971.2	13.049	19584.5	2.840	0.150
0.987	88396.7	12.820	19820.4	2.875	0.069

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.20 ADV. RATIO: 0.874  
POWER COEFF: 0.250 RECORD NO: 187.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 187.0

WIND TUNNEL:

STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	86570.0 PA	12.555 PSI
AIR DENSITY:	1.0544 KG/M3	0.06583 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.81 M/S	222.47 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1685.0	
ADVANCE RATIO:	0.874	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	30.5 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3808 M	54.36 IN.
RADIUS RATIO (@ MID CHORD):	0.807	
REL MACH NO. (@ MID CHORD):	0.613	

RUN DATE:	03-13-1987
RUN TIME:	14:06:54

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 187.0

RADIAL STATION: 6

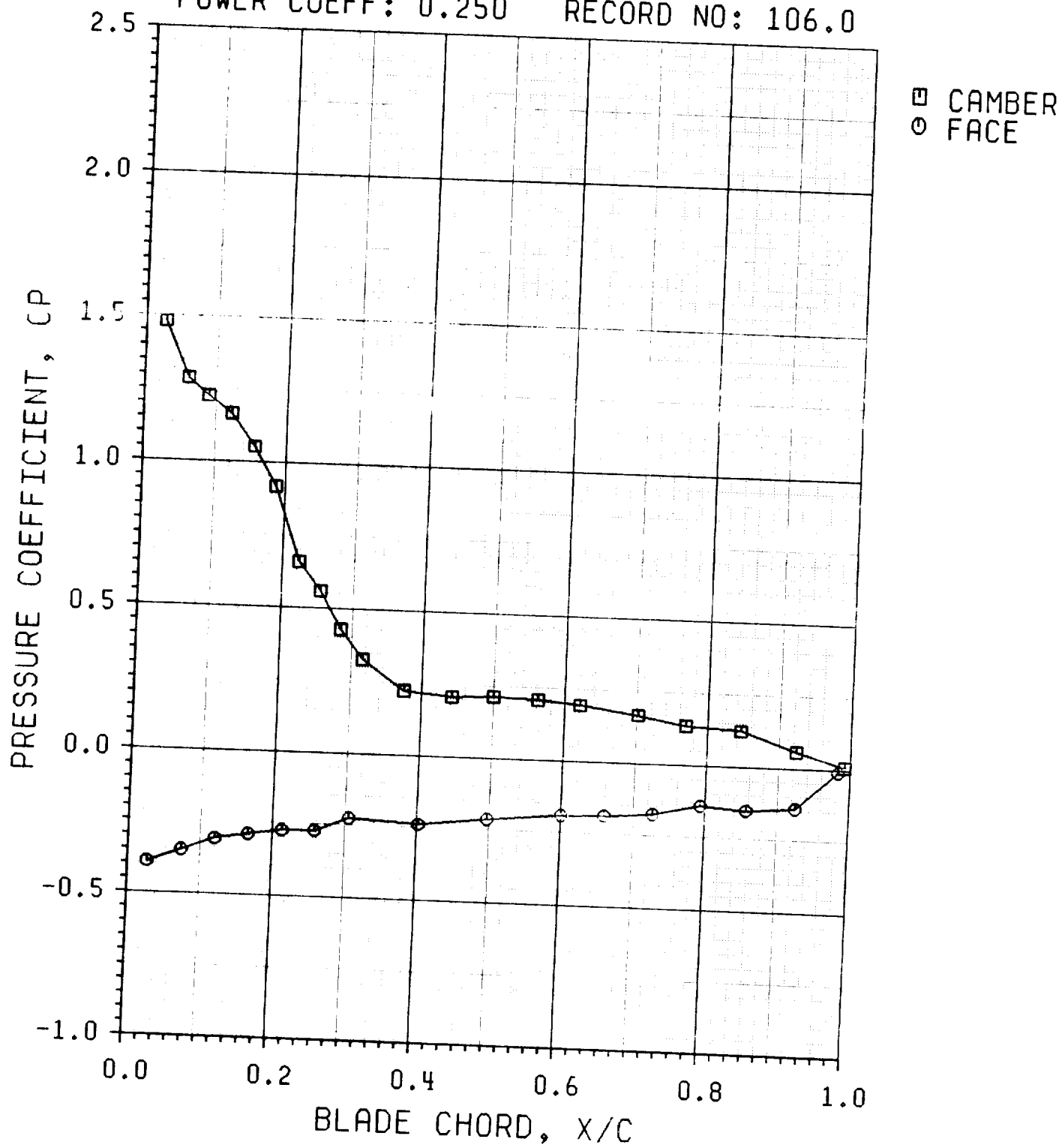
TUNNEL STATIC PRESSURE, P0: 86570.0 PA, 12.555 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	49980.2	7.249	22248.6	3.226	-1.645
0.058	57406.1	8.826	22199.4	3.220	-1.814
0.082	60240.4	8.737	22168.4	3.214	-1.188
0.114	65603.1	9.515	22142.8	3.211	-0.947
0.146	69756.1	10.117	22117.2	3.208	-0.760
0.176	75331.7	10.926	22078.6	3.202	-0.509
0.208	78060.6	11.321	22063.2	3.200	-0.386
0.239	79061.1	11.466	22060.0	3.199	-0.340
0.272	79277.4	11.498	22050.5	3.198	-0.331
0.312	79212.4	11.488	22055.1	3.199	-0.334
0.366	79289.4	11.500	22073.1	3.201	-0.330
0.428	79553.1	11.538	22115.2	3.207	-0.317
0.495	79747.9	11.566	22167.0	3.215	-0.308
0.553	80200.7	11.632	22235.0	3.225	-0.286
0.610	80541.7	11.681	22322.2	3.237	-0.270
0.688	81198.6	11.776	22476.8	3.260	-0.239
0.762	82098.4	11.907	22656.0	3.286	-0.197
0.833	82529.7	11.970	22852.8	3.314	-0.177
0.914	83789.6	12.152	23099.5	3.350	-0.120
0.991	85818.7	12.447	23362.7	3.388	-0.032
FACE					
0.022	96311.6	13.968	22255.8	3.228	0.438
0.069	94274.8	13.673	22192.2	3.219	0.347
0.114	93614.9	13.577	22148.4	3.212	0.318
0.161	93185.2	13.515	22098.1	3.205	0.299
0.210	92288.2	13.385	22076.7	3.202	0.259
0.252	92417.4	13.404	22059.8	3.199	0.265
0.300	92160.2	13.366	22045.8	3.197	0.254
0.394	91736.4	13.305	22078.5	3.202	0.234
0.491	91334.4	13.246	22148.6	3.212	0.215
0.591	90780.4	13.166	22289.2	3.233	0.189
0.659	90531.2	13.130	22399.3	3.249	0.177
0.724	90262.2	13.091	22541.3	3.269	0.164
0.789	90045.9	13.060	22693.0	3.291	0.153
0.857	90034.0	13.058	22899.7	3.321	0.151
0.923	90018.0	13.056	23111.3	3.352	0.149
0.985	87594.2	12.704	23329.6	3.384	0.044

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.20 ADV. RATIO: 0.881

POWER COEFF: 0.250 RECORD NO: 106.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 106.0

## WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	86770.0 PA	12.584 PSI
AIR DENSITY:	1.0680 KG/M3	0.06668 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.45 M/S	221.30 FT/S

## PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1664.0	
ADVANCE RATIO:	0.881	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	31.0 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3807 M	54.36 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	0.646	

RUN DATE:	03-10-1987
RUN TIME:	19:56:51

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 106.0

RADIAL STATION: 7

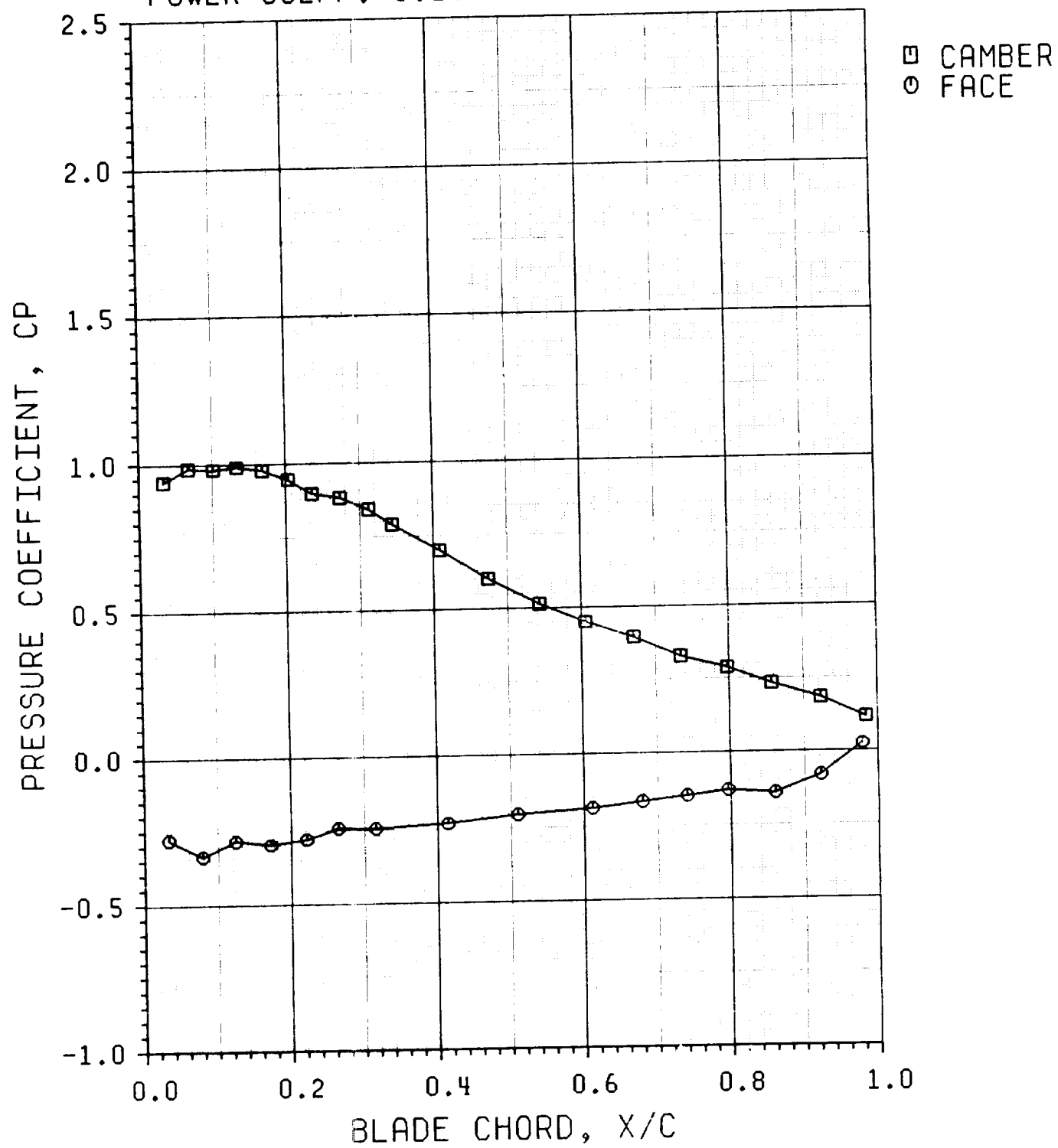
TUNNEL STATIC PRESSURE, P0: 86770.0 PA, 12.584 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	50182.6	7.278	24732.8	3.587	-1.479
0.061	54990.7	7.975	24722.0	3.585	-1.285
0.090	56547.2	8.201	24716.5	3.585	-1.228
0.123	58036.7	8.417	24704.5	3.583	-1.168
0.156	60819.2	8.821	24694.0	3.581	-1.051
0.187	64178.3	9.808	24681.1	3.580	-0.915
0.223	70542.6	10.231	24694.7	3.582	-0.657
0.254	72997.8	10.587	24710.6	3.584	-0.557
0.284	76227.7	11.056	24714.2	3.584	-0.427
0.316	78647.6	11.406	24728.7	3.586	-0.328
0.375	81261.2	11.786	24758.7	3.591	-0.222
0.442	81606.9	11.836	24813.4	3.599	-0.208
0.500	81461.9	11.815	24887.0	3.609	-0.218
0.562	81604.4	11.835	24972.2	3.622	-0.207
0.621	81916.8	11.881	25056.8	3.634	-0.194
0.702	82592.6	11.979	25221.8	3.658	-0.166
0.769	83356.9	12.089	25354.8	3.677	-0.135
0.846	83610.6	12.126	25534.3	3.703	-0.124
0.924	85291.7	12.370	25743.5	3.734	-0.057
0.992	86586.5	12.558	25938.5	3.762	-0.007
FACE					
0.027	96500.1	13.996	24724.1	3.586	0.394
0.074	95490.1	13.849	24718.5	3.584	0.353
0.120	94456.8	13.699	24681.4	3.580	0.311
0.166	94005.8	13.634	24692.4	3.581	0.293
0.213	93588.4	13.573	24669.5	3.578	0.276
0.258	93545.9	13.567	24687.8	3.581	0.274
0.305	92397.9	13.401	24706.0	3.583	0.228
0.402	92741.2	13.451	24768.7	3.592	0.241
0.497	92110.2	13.859	24871.9	3.607	0.215
0.600	91588.2	13.283	25003.5	3.626	0.193
0.660	91521.2	13.274	25101.1	3.640	0.189
0.727	91227.7	13.231	25239.4	3.661	0.177
0.793	90382.5	13.108	25392.3	3.683	0.142
0.857	90705.8	13.155	25555.2	3.706	0.154
0.925	90438.3	13.117	25739.7	3.733	0.148
0.983	87027.7	12.622	25918.6	3.759	0.010

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.20    ADV. RATIO: 0.883

POWER COEFF: 0.250    RECORD NO: 173.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 173.0

WIND TUNNEL:

STATIC TEMPERATURE:	288.0 K	49.7 F
STATIC PRESSURE:	87000.0 PA	12.618 PSI
AIR DENSITY:	1.0709 KG/M3	0.06685 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.45 M/S	221.30 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1660.0	
ADVANCE RATIO:	0.883	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	30.8 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.8807 M	54.36 IN.
RADIUS RATIO (@ MID CHORD):	0.904	
REL MACH NO. (@ MID CHORD):	0.674	

RUN DATE:	03-12-1987
RUN TIME:	20:34:16

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 173.0

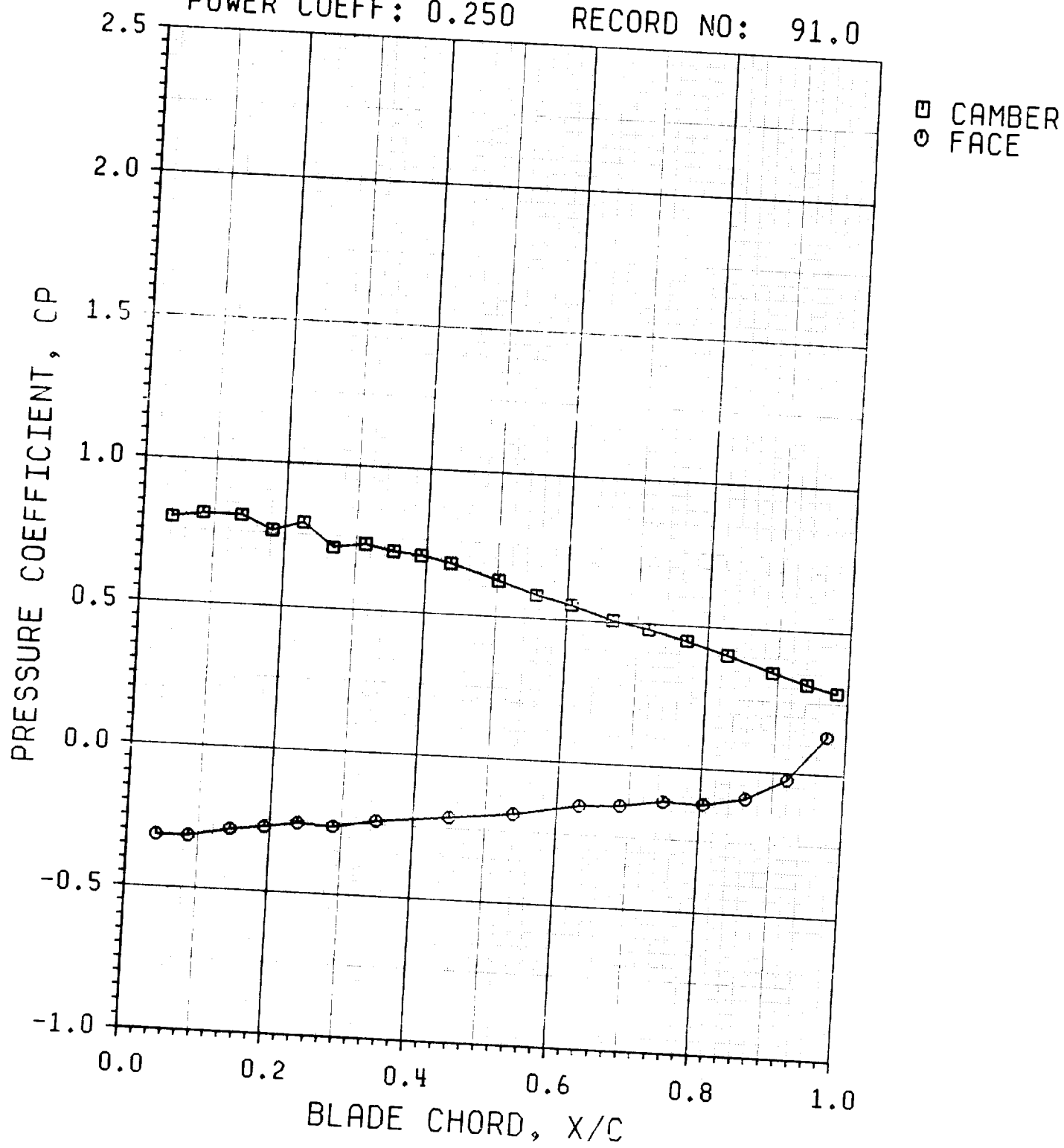
RADIAL STATION: 8

TUNNEL STATIC PRESSURE, PO: 87000.0 PA, 12.618 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.038	61557.1	8.928	27075.4	3.927	-0.940
0.067	60822.1	8.749	27076.2	3.927	-0.985
0.101	60441.5	8.766	27076.9	3.927	-0.981
0.133	60226.2	8.735	27083.1	3.928	-0.989
0.168	60489.9	8.773	27106.9	3.931	-0.978
0.203	61343.2	8.897	27109.6	3.932	-0.946
0.235	62675.9	9.090	27116.6	3.938	-0.897
0.273	63046.9	9.144	27148.4	3.937	-0.882
0.312	64094.5	9.296	27177.8	3.942	-0.843
0.344	65503.4	9.500	27199.2	3.945	-0.790
0.408	67931.2	9.852	27256.7	3.953	-0.700
0.474	70605.8	10.240	27320.2	3.962	-0.600
0.543	72954.2	10.581	27395.4	3.973	-0.513
0.605	74663.2	10.829	27492.3	3.987	-0.449
0.670	76100.1	11.037	27589.6	4.001	-0.395
0.734	77913.7	11.800	27692.4	4.016	-0.328
0.797	79009.7	11.459	27823.4	4.035	-0.287
0.857	80533.6	11.680	27924.0	4.050	-0.232
0.923	81868.9	11.874	28086.0	4.073	-0.183
0.984	83728.8	12.143	28209.4	4.091	-0.116
FACE					
0.033	94497.4	13.705	27059.7	3.925	0.277
0.079	96054.0	13.931	27060.5	3.925	0.335
0.124	94635.4	13.725	27077.0	3.927	0.282
0.172	95021.4	13.781	27078.6	3.927	0.296
0.221	94543.4	13.712	27085.2	3.928	0.279
0.264	93557.6	13.569	27113.1	3.932	0.242
0.315	93637.7	13.581	27145.1	3.937	0.245
0.414	98298.0	13.531	27229.8	3.949	0.231
0.509	92616.1	13.432	27330.0	3.964	0.205
0.611	92178.2	13.369	27471.3	3.984	0.188
0.679	91629.9	13.289	27570.6	3.999	0.168
0.740	91138.2	13.218	27672.3	4.013	0.150
0.796	90676.1	13.151	27777.1	4.029	0.132
0.860	90995.4	13.197	27906.2	4.047	0.143
0.922	89299.6	12.951	28063.6	4.070	0.082
0.979	86330.3	12.521	28196.5	4.089	-0.024

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.20 ADV. RATIO: 0.891  
POWER COEFF: 0.250 RECORD NO: 91.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 91.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	289.0 K	60.5 F
STATIC PRESSURE:	86660.0 PA	12.569 PSI
AIR DENSITY:	1.0445 KG/M3	0.06521 LBF/FT3
SPEED OF SOUND:	340.81 M/S	1118.19 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	68.16 M/S	223.64 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1662.0	
ADVANCE RATIO:	0.891	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	31.2 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3806 M	54.35 IN.
RADIUS RATIO (@ MID CHORD):	0.938	
REL MACH NO. (@ MID CHORD):	0.691	

RUN DATE:	03-10-1987
RUN TIME:	15:11:14

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 91.0

RADIAL STATION: 9

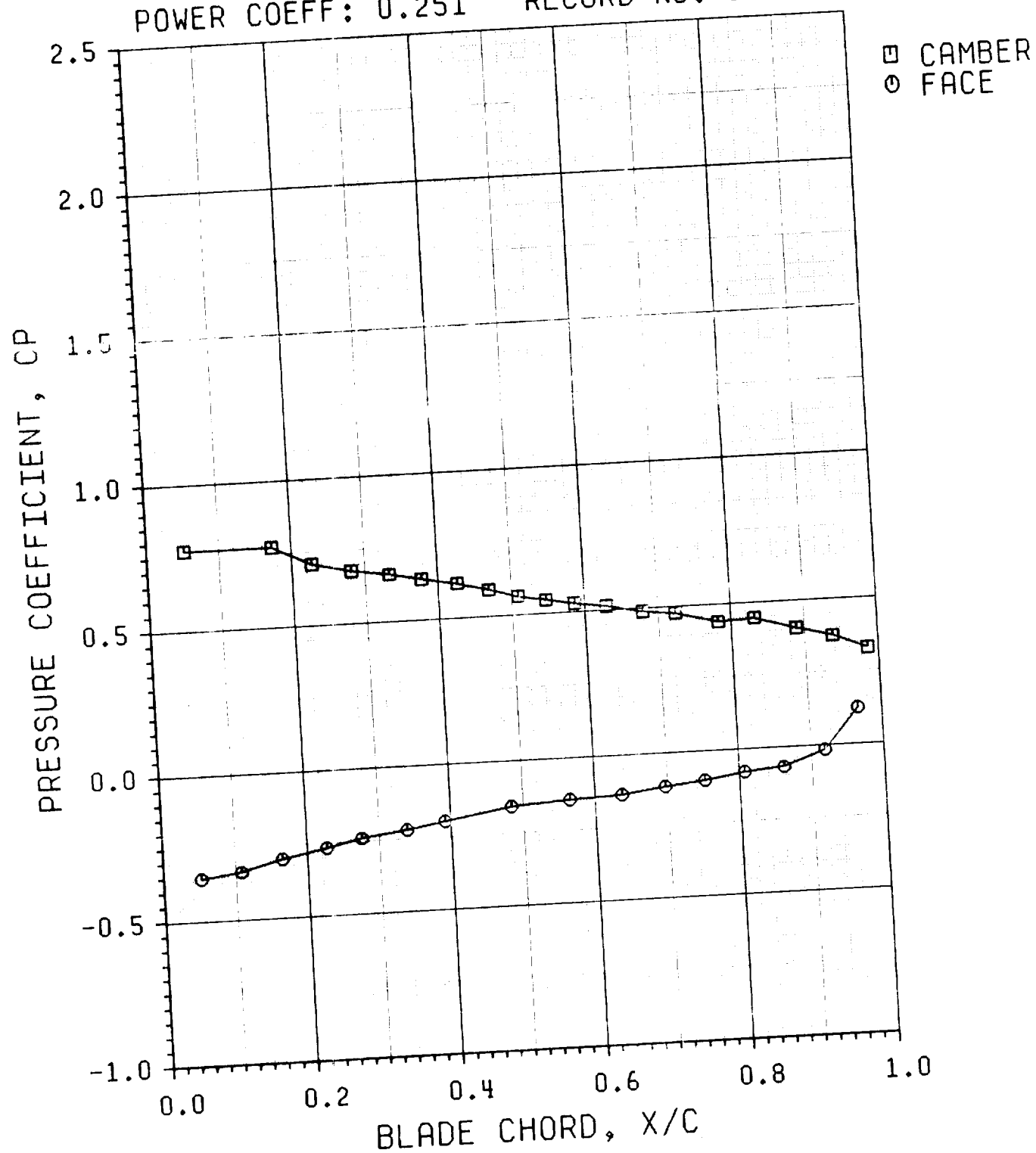
TUNNEL STATIC PRESSURE, PO: 86660.0 PA, 12.569 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	64007.0	9.283	28545.0	4.140	-0.794
0.084	68501.2	9.210	28567.1	4.148	-0.811
0.138	63548.7	9.216	28586.9	4.146	-0.809
0.182	64915.4	9.415	28600.5	4.148	-0.760
0.225	68996.1	9.282	28681.8	4.152	-0.792
0.268	66343.5	9.622	28638.8	4.154	-0.709
0.313	65874.1	9.554	28671.7	4.158	-0.725
0.353	66433.9	9.635	28695.8	4.162	-0.705
0.392	66702.8	9.674	28729.8	4.167	-0.695
0.434	67266.2	9.756	28757.7	4.171	-0.674
0.502	68725.0	9.967	28818.3	4.180	-0.622
0.556	69947.4	10.145	28873.3	4.188	-0.579
0.606	70702.0	10.254	28938.1	4.197	-0.551
0.665	72027.8	10.446	28989.5	4.204	-0.505
0.716	72700.2	10.544	29054.6	4.214	-0.480
0.770	73670.1	10.685	29114.7	4.228	-0.446
0.828	74890.1	10.862	29202.0	4.235	-0.403
0.892	76432.4	11.085	29289.7	4.248	-0.349
0.941	77482.6	11.237	29360.8	4.258	-0.313
0.984	78249.9	11.349	29418.3	4.267	-0.286
FACE					
0.041	95708.6	13.881	28539.8	4.139	0.317
0.086	95746.8	13.886	28557.5	4.142	0.318
0.144	94911.8	13.765	28569.7	4.144	0.289
0.192	94560.7	13.714	28589.6	4.146	0.276
0.238	94023.7	13.637	28610.5	4.149	0.257
0.288	94212.6	13.664	28638.3	4.153	0.264
0.348	93454.4	13.554	28679.2	4.159	0.237
0.450	92743.7	13.451	28748.0	4.169	0.212
0.539	92137.3	13.363	28845.4	4.184	0.190
0.631	91001.4	13.198	28930.5	4.196	0.150
0.688	90775.6	13.165	29000.9	4.206	0.142
0.748	90171.6	13.078	29068.7	4.216	0.121
0.804	90262.4	13.091	29156.1	4.229	0.124
0.863	89526.8	12.984	29234.0	4.240	0.098
0.920	87402.4	12.676	29317.2	4.252	0.025
0.973	82818.0	12.011	29400.6	4.264	-0.131

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10 MACH NO: 0.20 ADV. RATIO: 0.883  
POWER COEFF: 0.251 RECORD NO: 151.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 151.0

WIND TUNNEL:

STATIC TEMPERATURE:	287.0 K	56.9 F
STATIC PRESSURE:	86890.0 PA	12.602 PSI
AIR DENSITY:	1.0546 KG/M3	0.06584 LBF/FT3
SPEED OF SOUND:	339.63 M/S	1114.82 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.93 M/S	222.86 FT/S

PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1671.0	
ADVANCE RATIO:	0.888	
POWER COEFFICIENT:	0.251	
BLADE ANGLE (@ X=41" STA):	30.5 DEG.	
BLADE CHORD:	0.2064 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3808 M	54.36 IN.
RADIUS RATIO (@ MID CHORD):	0.964	
REL MACH NO. (@ MID CHORD):	0.715	

RUN DATE:	03-12-1987
RUN TIME:	14:16:33

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 151.0

RADIAL STATION: 10

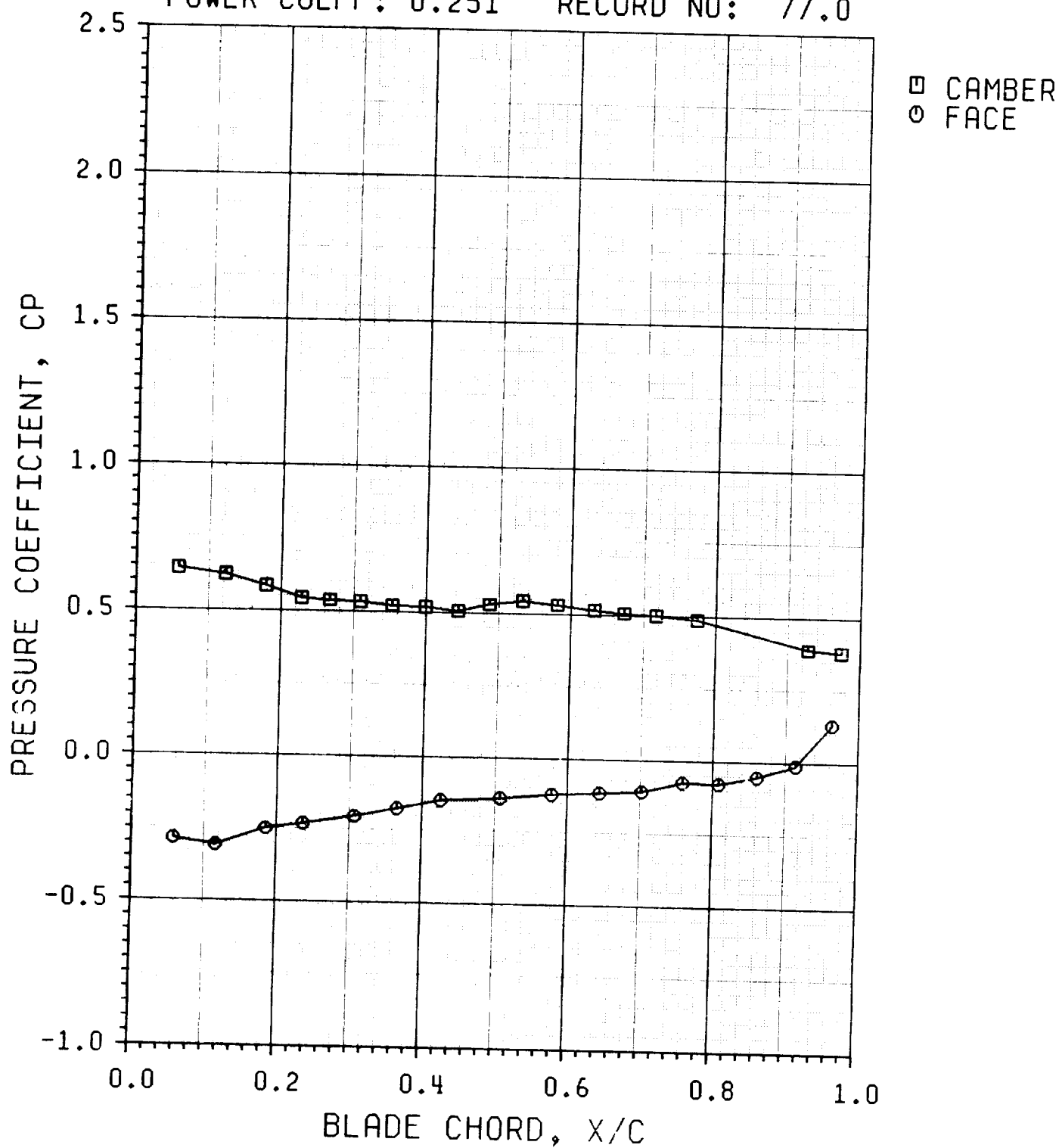
TUNNEL STATIC PRESSURE, PO: 86890.0 PA, 12.602 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	63159.5	9.160	30732.6	4.457	-0.772
0.113	*****	*****	30764.0	4.462	*****
0.173	63127.7	9.156	30780.8	4.464	-0.772
0.227	65073.1	9.438	30801.2	4.467	-0.708
0.281	65992.9	9.571	30829.5	4.471	-0.678
0.333	66542.5	9.651	30873.1	4.478	-0.659
0.377	67181.2	9.743	30882.7	4.479	-0.638
0.426	67841.9	9.839	30920.4	4.484	-0.616
0.469	68640.1	9.955	30961.5	4.490	-0.589
0.509	69517.4	10.082	30981.0	4.493	-0.561
0.547	70011.5	10.154	31011.8	4.498	-0.544
0.586	70524.1	10.228	31053.3	4.504	-0.527
0.630	70952.9	10.290	31078.6	4.507	-0.513
0.679	71741.0	10.405	31122.5	4.514	-0.487
0.724	72046.9	10.449	31167.4	4.520	-0.476
0.782	73193.9	10.615	31218.9	4.528	-0.439
0.832	72933.0	10.578	31274.2	4.536	-0.446
0.889	74204.9	10.762	31384.6	4.545	-0.405
0.938	75145.9	10.899	31399.7	4.554	-0.374
0.985	76601.7	11.110	31446.5	4.561	-0.327
FACE					
0.052	97793.5	14.183	30705.3	4.453	0.355
0.108	97206.8	14.098	30727.0	4.456	0.336
0.165	96042.2	13.929	30753.2	4.460	0.298
0.227	95104.1	13.793	30777.6	4.464	0.267
0.276	94320.5	13.680	30795.1	4.466	0.241
0.339	93665.4	13.585	30825.7	4.471	0.220
0.392	92963.9	13.483	30858.0	4.475	0.197
0.484	91852.4	13.322	30928.3	4.486	0.160
0.565	91479.3	13.267	30992.2	4.495	0.148
0.637	91228.6	13.231	31045.3	4.503	0.140
0.697	90608.3	13.141	31103.0	4.511	0.120
0.752	90171.2	13.078	31171.6	4.521	0.105
0.807	89450.7	12.973	31217.7	4.528	0.082
0.862	89107.4	12.923	31285.5	4.537	0.071
0.919	87411.2	12.677	31357.4	4.548	0.017
0.967	83044.2	12.044	31407.4	4.555	-0.122

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11 MACH NO: 0.20 ADV. RATIO: 0.882

POWER COEFF: 0.251 RECORD NO: 77.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 77.0

## WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	86600.0 PA	12.560 PSI
AIR DENSITY:	1.0660 KG/M3	0.06655 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.45 M/S	221.30 FT/S

## PROPFAN:

RADIAL STATION:	11	
ROTOR SPEED (RPM):	1661.0	
ADVANCE RATIO:	0.882	
POWER COEFFICIENT:	0.251	
BLADE ANGLE (@ X=41" STA):	31.3 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3805 M	54.35 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.723	

RUN DATE:	03-09-1987
RUN TIME:	21:26:09

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 77.0

RADIAL STATION: 11

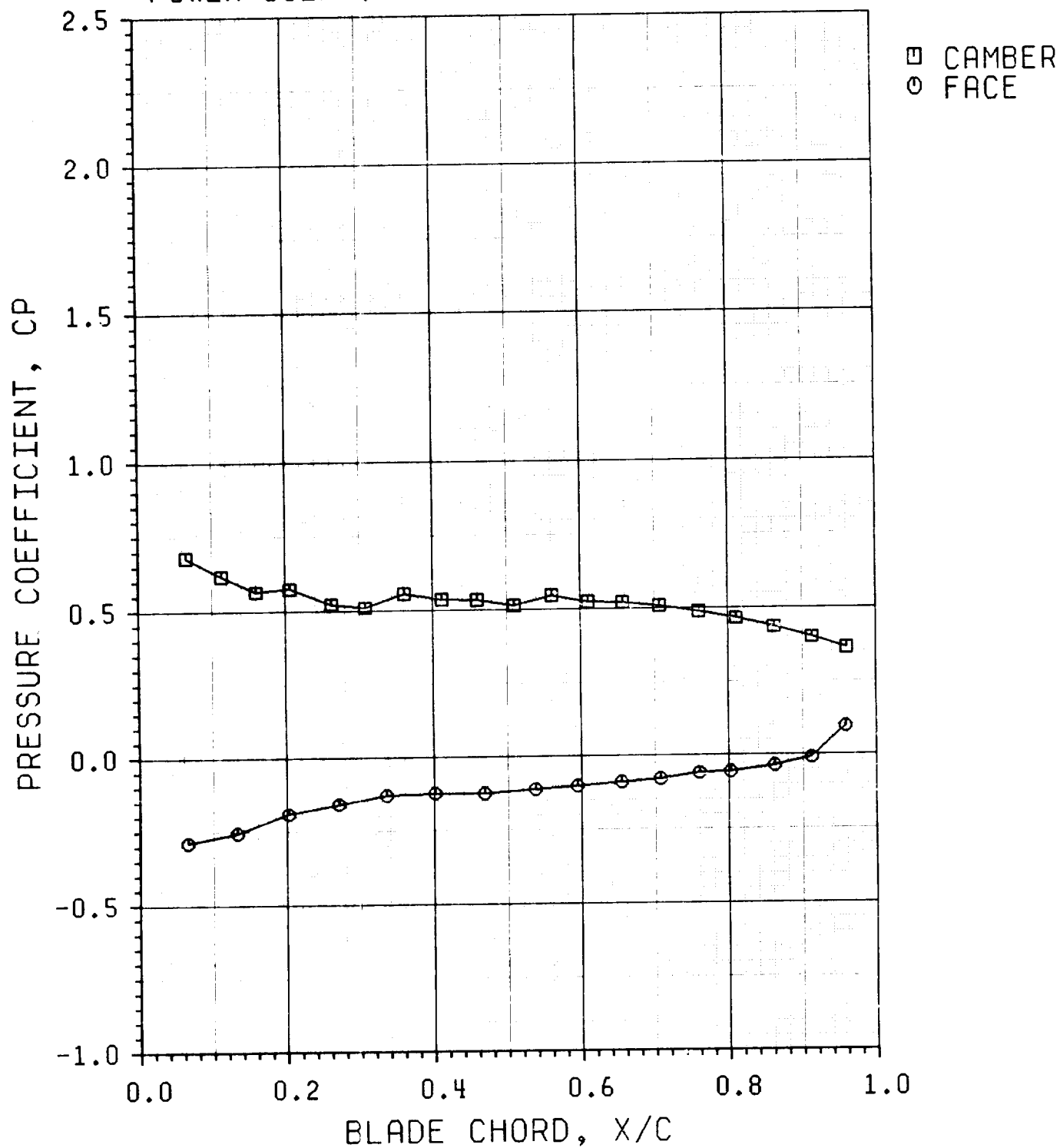
TUNNEL STATIC PRESSURE, PO: 86600.0 PA, 12.560 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	66545.7	9.651	31387.0	4.545	-0.640
0.123	67148.7	9.739	31382.1	4.551	-0.620
0.179	68282.7	9.903	81415.4	4.556	-0.583
0.228	69526.2	10.084	81489.8	4.560	-0.548
0.267	69738.0	10.114	81468.4	4.568	-0.536
0.309	69851.4	10.131	81472.4	4.565	-0.532
0.353	70179.9	10.178	81497.2	4.568	-0.521
0.399	70278.9	10.193	81524.0	4.572	-0.518
0.444	70660.2	10.248	81553.9	4.576	-0.505
0.487	69896.5	10.137	81588.2	4.581	-0.529
0.533	69445.1	10.072	31627.4	4.587	-0.542
0.581	69792.7	10.122	31663.2	4.592	-0.531
0.632	70286.6	10.194	31700.2	4.598	-0.515
0.678	70547.2	10.232	31735.2	4.603	-0.506
0.717	70720.1	10.257	31757.4	4.606	-0.500
0.774	71065.8	10.307	31813.2	4.614	-0.488
0.822	*****	*****	31851.0	4.619	*****
0.875	*****	*****	31895.2	4.626	*****
0.928	74162.7	10.756	31970.5	4.637	-0.389
0.974	74437.1	10.796	32007.6	4.642	-0.380
FACE					
0.058	95604.1	13.866	31829.8	4.544	0.287
0.116	96328.0	13.971	31357.5	4.548	0.310
0.185	94489.5	13.704	31375.9	4.551	0.251
0.236	93921.4	13.622	31411.7	4.556	0.233
0.307	93067.9	13.498	31442.3	4.560	0.206
0.365	92214.6	13.374	31473.8	4.565	0.178
0.425	91250.7	13.234	31510.7	4.570	0.148
0.507	90948.0	13.190	31553.3	4.576	0.138
0.578	90499.9	13.125	31614.0	4.585	0.123
0.644	90237.6	13.087	31668.1	4.593	0.115
0.702	90027.9	13.057	31708.2	4.599	0.103
0.758	88973.6	12.904	31764.3	4.607	0.075
0.808	89071.4	12.918	31812.4	4.614	0.078
0.861	88267.9	12.802	31859.9	4.621	0.052
0.914	86992.7	12.617	31911.5	4.628	0.012
0.963	82447.7	11.958	31962.9	4.636	-0.130

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12 MACH NO: 0.20 ADV. RATIO: 0.876

POWER COEFF: 0.250 RECORD NO: 122.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 122.0

WIND TUNNEL:

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STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	86650.0 PA	12.567 PSI
AIR DENSITY:	1.0628 KG/M3	0.06635 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.57 M/S	221.70 FT/S

PROPFAN:

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RADIAL STATION:	12	
ROTOR SPEED (RPM):	1677.0	
ADVANCE RATIO:	0.876	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	31.6 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3804 M	54.85 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.735	

RUN DATE:	08-11-1987
RUN TIME:	17:18:02



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 122.0

RADIAL STATION: 12

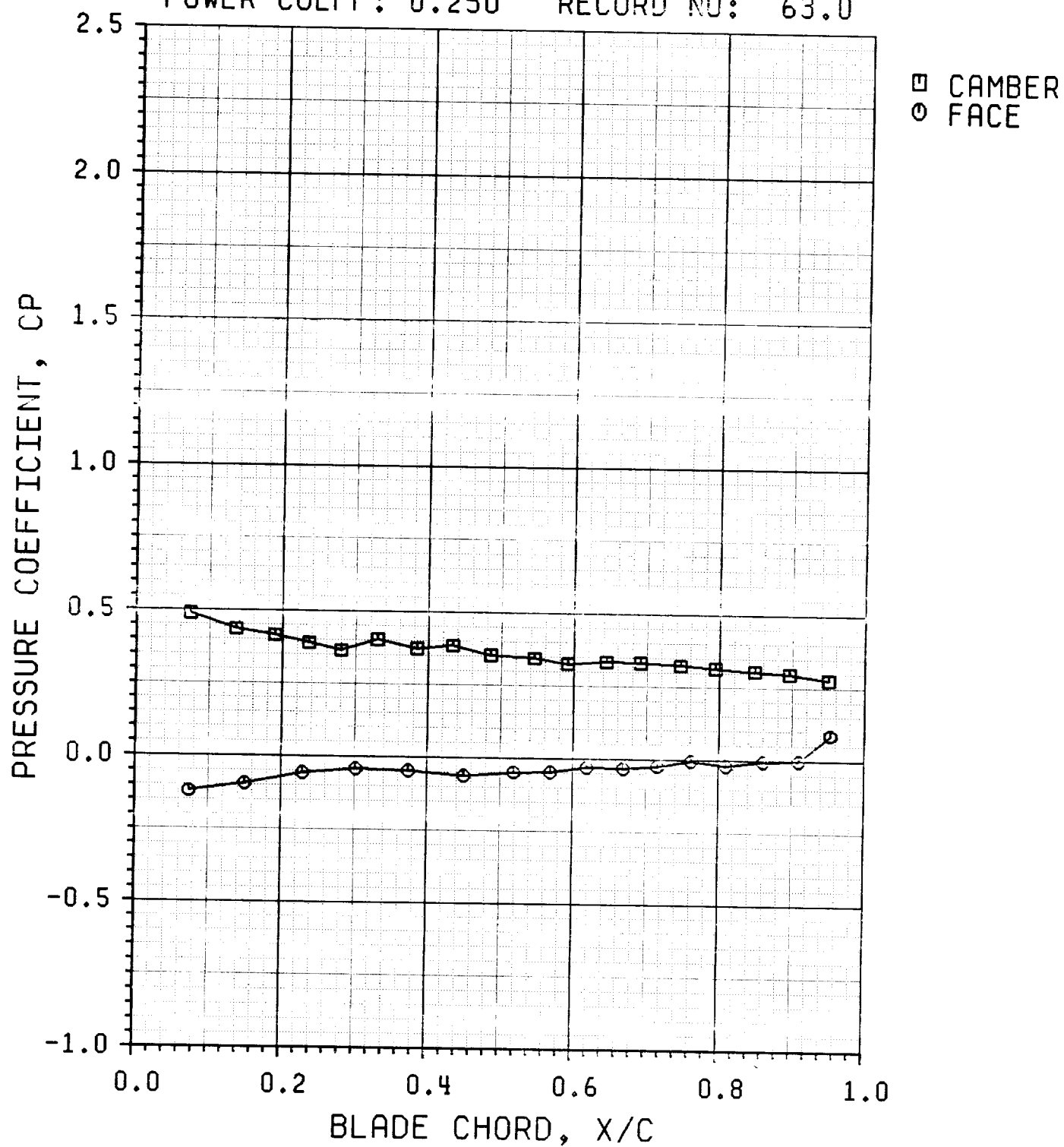
TUNNEL STATIC PRESSURE, PO: 86650.0 PA, 12.567 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	64527.1	9.359	32514.5	4.716	-0.680
0.113	66572.1	9.655	32547.4	4.720	-0.617
0.160	68280.7	9.903	32572.7	4.724	-0.564
0.206	67952.0	9.855	32589.3	4.727	-0.574
0.262	69672.2	10.105	32615.3	4.730	-0.521
0.308	70053.9	10.160	32628.2	4.732	-0.509
0.361	68533.7	9.940	32670.4	4.738	-0.555
0.412	69162.2	10.031	32686.2	4.741	-0.535
0.460	69215.4	10.038	32703.9	4.743	-0.533
0.510	69885.7	10.136	32746.8	4.749	-0.512
0.561	68764.7	9.973	32789.0	4.755	-0.545
0.610	69505.5	10.081	32834.0	4.762	-0.522
0.657	69551.1	10.087	32854.2	4.765	-0.520
0.707	69961.7	10.147	32889.5	4.770	-0.507
0.760	70616.2	10.242	32923.2	4.775	-0.487
0.811	71344.3	10.347	32962.1	4.781	-0.464
0.862	72338.4	10.491	33001.4	4.786	-0.434
0.913	73470.4	10.656	33052.0	4.794	-0.399
0.960	74682.1	10.831	33090.8	4.799	-0.362
FACE					
0.065	96022.1	13.926	32503.7	4.714	0.288
0.132	94957.6	13.772	32538.4	4.719	0.255
0.202	92853.1	13.467	32560.0	4.722	0.191
0.270	91834.1	13.319	32593.5	4.727	0.159
0.335	90898.6	13.183	32623.3	4.731	0.130
0.401	90707.9	13.156	32655.8	4.736	0.124
0.468	90727.7	13.158	32693.4	4.742	0.125
0.537	90324.6	13.100	32728.7	4.747	0.112
0.594	90004.4	13.054	32778.4	4.754	0.102
0.654	89601.7	12.995	32814.9	4.759	0.090
0.707	89291.1	12.950	32865.1	4.767	0.080
0.760	88640.9	12.856	32899.8	4.772	0.061
0.802	88557.4	12.844	32923.7	4.775	0.058
0.862	87881.1	12.746	32981.8	4.783	0.037
0.912	87000.7	12.618	33013.6	4.788	0.011
0.958	83522.7	12.114	33060.6	4.795	-0.095

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13    MACH NO: 0.20    ADV. RATIO: 0.883

POWER COEFF: 0.250    RECORD NO: 63.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 63.0

## WIND TUNNEL:

STATIC TEMPERATURE:	285.0 K	53.3 F
STATIC PRESSURE:	86350.0 PA	12.524 PSI
AIR DENSITY:	1.0554 KG/M3	0.06589 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.20	
INFLOW VELOCITY:	67.69 M/S	222.09 FT/S

## PROPFAN:

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1665.0	
ADVANCE RATIO:	0.883	
POWER COEFFICIENT:	0.250	
BLADE ANGLE (@ X=41" STA):	31.3 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3805 M	54.35 IN.
RADIUS RATIO (@ MID CHORD):	0.996	
REL MACH NO. (@ MID CHORD):	0.786	

RUN DATE:	03-09-1987
RUN TIME:	16:47:19

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 63.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 86350.0 PA, 12.524 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	70485.1	10.223	32546.9	4.720	-0.487
0.136	72210.4	10.473	32576.4	4.725	-0.434
0.189	72880.9	10.570	32571.5	4.724	-0.414
0.236	73654.9	10.682	32596.3	4.728	-0.389
0.280	74476.7	10.802	32619.4	4.731	-0.364
0.330	73220.6	10.619	32626.2	4.732	-0.402
0.384	74165.8	10.756	32656.0	4.736	-0.373
0.433	73815.1	10.706	32680.9	4.740	-0.384
0.485	74844.1	10.855	32693.5	4.742	-0.352
0.545	75087.7	10.890	32726.0	4.746	-0.344
0.591	75660.0	10.973	32753.1	4.750	-0.326
0.644	75403.6	10.936	32773.6	4.753	-0.334
0.691	75472.3	10.946	32796.2	4.757	-0.332
0.746	75705.2	10.980	32827.0	4.761	-0.324
0.794	75983.9	11.020	32865.2	4.767	-0.315
0.848	76284.6	11.064	32894.6	4.771	-0.306
0.896	76576.2	11.106	32924.7	4.775	-0.297
0.950	77179.2	11.194	32962.8	4.781	-0.278
FACE					
0.074	90278.9	13.093	32520.5	4.717	0.121
0.150	89442.1	12.972	32542.7	4.720	0.095
0.229	88243.4	12.798	32584.4	4.726	0.058
0.302	87708.2	12.721	32596.5	4.728	0.042
0.374	87869.7	12.744	32630.3	4.732	0.047
0.450	88421.9	12.824	32663.2	4.737	0.063
0.519	87945.7	12.755	32685.7	4.740	0.049
0.569	87874.4	12.745	32711.9	4.744	0.047
0.619	87326.7	12.665	32741.6	4.749	0.030
0.669	87447.1	12.683	32773.4	4.753	0.033
0.716	87150.9	12.640	32800.4	4.757	0.024
0.762	86508.6	12.547	32824.5	4.761	0.005
0.810	87019.3	12.621	32844.9	4.764	0.020
0.861	86529.9	12.550	32865.5	4.767	0.005
0.910	86456.4	12.539	32919.4	4.774	0.003
0.953	83515.7	12.113	32933.9	4.776	-0.086

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B7

(B7.1 through B7.13)

**Pressure Coefficient Data for:**

Nominal Mach Number,  $M_\infty = 0.500 \pm 0.001$

Advance Ratio,  $J = 3.071 \pm 0.013$

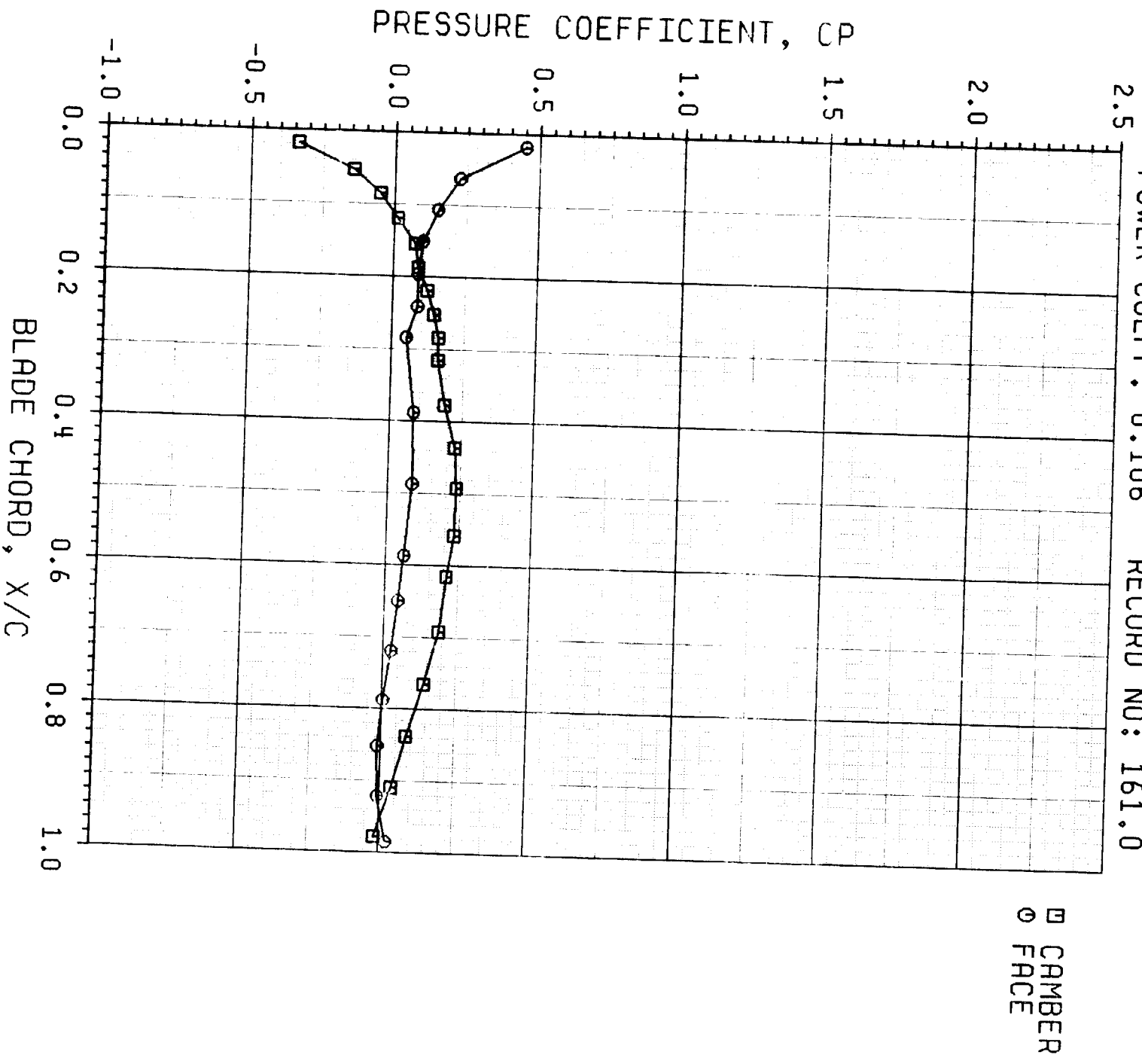
Power Coefficient,  $CP = 0.110 \pm 0.004$

Blade Angle,  $\beta = 51.8 \pm 0.9^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1    MACH NO: 0.50    ADV. RATIO: 3.072

POWER COEFF: 0.106    RECORD NO: 161.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 161.0

## WIND TUNNEL:

STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	76480.0 PA	11.092 PSI
AIR DENSITY:	0.9618 KG/M3	0.06004 LBF/FT3
SPEED OF SOUND:	333.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.36 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1188.0	
ADVANCE RATIO:	3.072	
POWER COEFFICIENT:	0.106	
BLADE ANGLE (@ X=41" STA):	50.9 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3713 M	53.99 IN.
RADIUS RATIO (@ MID CHORD):	0.312	
REL MACH NO. (@ MID CHORD):	0.525	

RUN DATE:	03-12-1987
RUN TIME:	17:02:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 161.0

RADIAL STATION: 1

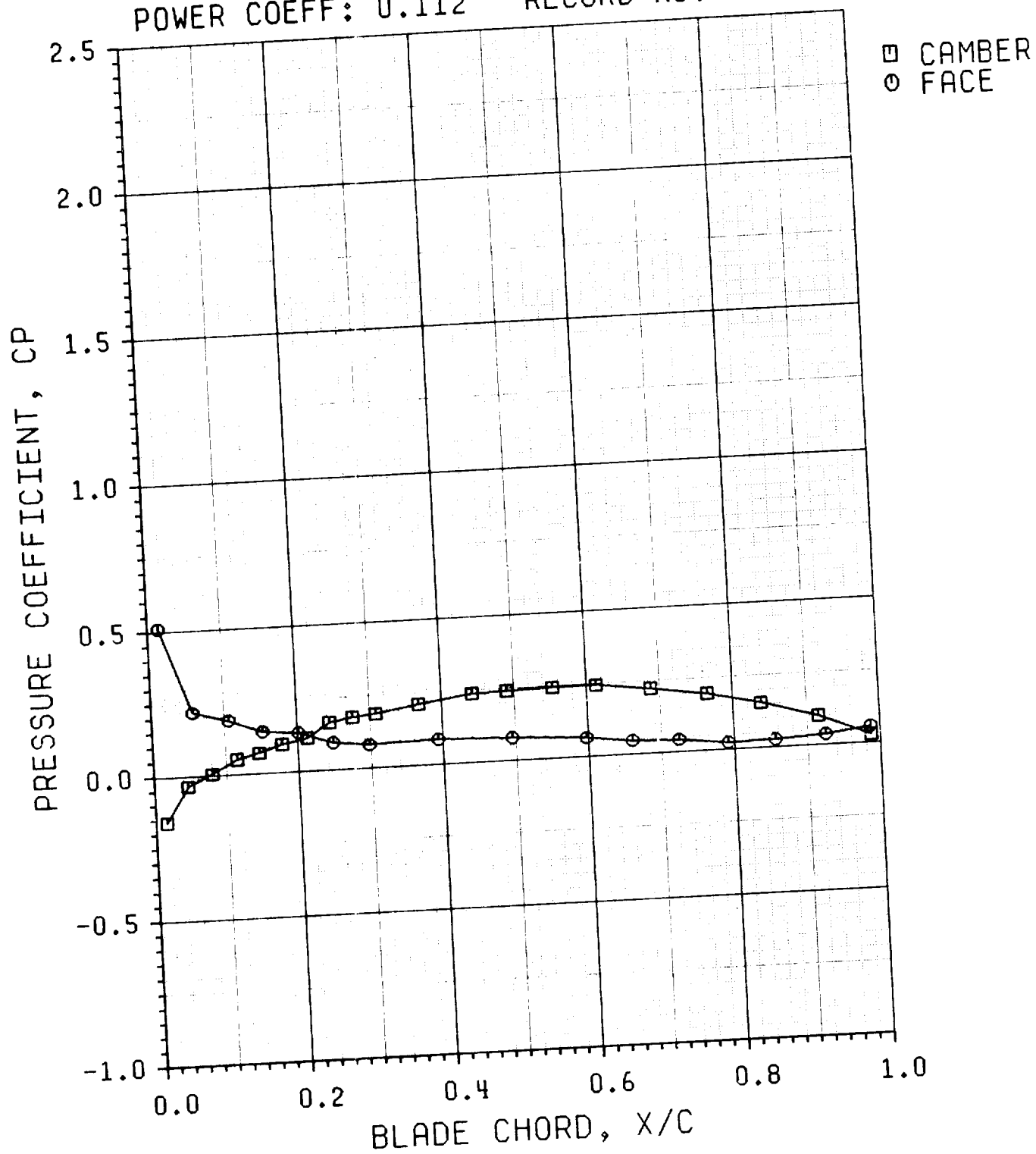
TUNNEL STATIC PRESSURE, PO: 76480.0 PA, 11.092 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	81357.4	11.799	14437.8	2.094	0.388
0.053	78651.0	11.892	14447.9	2.095	0.143
0.086	77197.7	11.196	14457.9	2.097	0.050
0.119	76316.2	11.068	14471.4	2.099	-0.011
0.154	75420.6	10.938	14486.2	2.101	-0.073
0.187	75254.7	10.914	14501.4	2.108	-0.084
0.219	74759.7	10.843	14517.5	2.106	-0.118
0.252	74397.2	10.790	14538.8	2.108	-0.143
0.284	74154.4	10.755	14550.0	2.110	-0.160
0.315	74152.1	10.754	14569.2	2.113	-0.160
0.377	73746.4	10.696	14606.1	2.118	-0.187
0.436	73154.9	10.610	14646.9	2.124	-0.227
0.492	73010.6	10.589	14672.0	2.128	-0.236
0.558	73060.9	10.596	14731.9	2.137	-0.232
0.615	73391.5	10.644	14776.7	2.143	-0.209
0.692	73698.8	10.689	14833.8	2.151	-0.187
0.765	74387.9	10.789	14898.7	2.161	-0.140
0.838	75219.4	10.909	14957.7	2.169	-0.084
0.910	75931.5	11.013	15022.8	2.179	-0.037
0.978	76732.4	11.129	15083.8	2.188	0.017
FACE					
0.018	69957.4	10.146	14446.9	2.095	-0.451
0.063	73219.2	10.619	14480.0	2.100	-0.225
0.107	74325.8	10.780	14503.1	2.103	-0.149
0.151	75045.6	10.884	14528.6	2.106	-0.099
0.196	75264.0	10.916	14546.4	2.110	-0.084
0.241	75243.4	10.913	14568.2	2.113	-0.085
0.284	75760.1	10.988	14587.9	2.116	-0.049
0.388	75289.1	10.919	14643.0	2.124	-0.081
0.487	75277.6	10.918	14702.6	2.132	-0.082
0.587	75579.4	10.961	14766.6	2.142	-0.061
0.650	75815.1	10.996	14806.1	2.147	-0.045
0.720	76089.1	11.035	14855.6	2.155	-0.026
0.788	76438.2	11.086	14909.5	2.162	-0.003
0.852	76659.5	11.118	14961.9	2.170	0.012
0.922	76614.3	11.112	15022.3	2.179	0.009
0.985	76145.1	11.044	15081.7	2.187	-0.022

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2 MACH NO: 0.50 ADV. RATIO: 3.064  
POWER COEFF: 0.112 RECORD NO: 214.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 214.0

WIND TUNNEL:

STATIC TEMPERATURE:	273.0 K	31.7 F
STATIC PRESSURE:	76060.0 PA	11.031 PSI
AIR DENSITY:	0.9705 KG/M3	0.06059 LBF/FT3
SPEED OF SOUND:	331.24 M/S	1086.80 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	165.62 M/S	548.40 FT/S

PROPFAN:

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1183.0	
ADVANCE RATIO:	3.064	
POWER COEFFICIENT:	0.112	
BLADE ANGLE (@ X=41" STA):	51.7 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3708 M	53.97 IN.
RADIUS RATIO (@ MID CHORD):	0.448	
REL MACH NO. (@ MID CHORD):	0.550	

RUN DATE:	03-18-1987
RUN TIME:	23:22:18

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 214.0

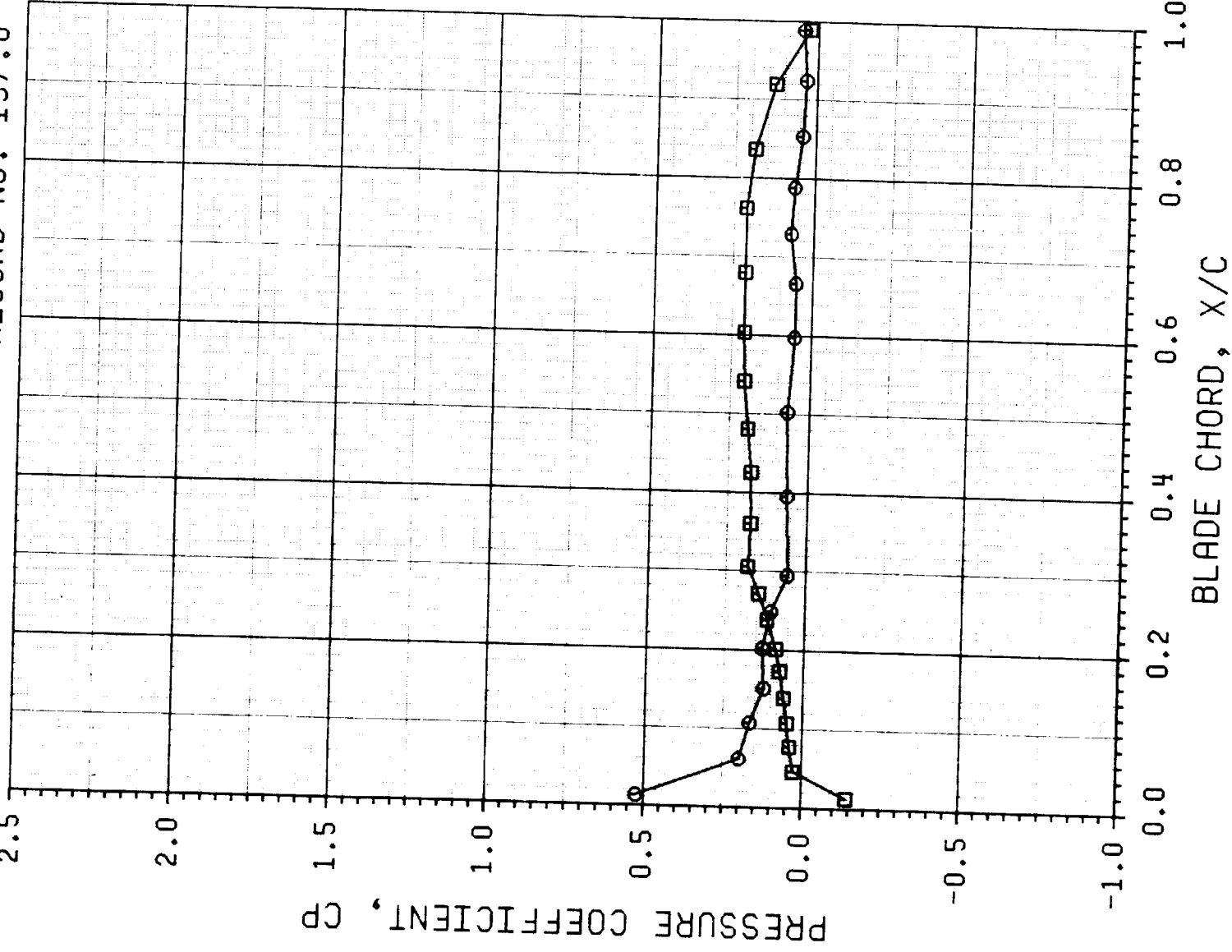
RADIAL STATION: 2

TUNNEL STATIC PRESSURE, PO: 76060.0 PA, 11.031 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	78584.9	11.397	15815.1	2.294	0.160
0.046	76628.8	11.114	15818.6	2.294	0.036
0.080	75990.9	11.021	15822.1	2.295	-0.004
0.115	75266.0	10.916	15831.2	2.296	-0.050
0.146	74966.1	10.873	15838.0	2.297	-0.069
0.178	74563.6	10.814	15827.3	2.295	-0.095
0.213	74263.7	10.771	15855.9	2.300	-0.113
0.244	73491.4	10.659	15868.2	2.301	-0.162
0.276	73245.2	10.623	15879.2	2.303	-0.177
0.308	73124.4	10.605	15894.5	2.305	-0.185
0.368	72717.2	10.546	15923.9	2.309	-0.210
0.442	72264.1	10.481	15957.6	2.314	-0.238
0.490	72220.6	10.474	15994.4	2.320	-0.240
0.553	72145.1	10.463	16035.4	2.326	-0.244
0.613	72129.5	10.461	16079.8	2.332	-0.244
0.688	72455.5	10.508	16136.1	2.340	-0.223
0.765	72908.8	10.574	16198.6	2.349	-0.195
0.838	73560.3	10.669	16265.0	2.359	-0.154
0.916	74429.9	10.795	16340.6	2.370	-0.100
0.987	75616.9	10.967	16408.7	2.380	-0.027
FACE					
0.015	68009.3	9.864	15830.1	2.296	-0.509
0.057	72594.2	10.529	15839.7	2.297	-0.219
0.106	73105.3	10.603	15852.4	2.299	-0.186
0.152	73811.7	10.705	15867.7	2.301	-0.142
0.201	73958.7	10.726	15879.6	2.303	-0.132
0.248	74581.9	10.817	15896.9	2.306	-0.093
0.298	74806.7	10.849	15915.1	2.308	-0.079
0.393	74699.4	10.834	15958.4	2.314	-0.085
0.495	74810.4	10.850	16013.3	2.322	-0.078
0.597	75032.2	10.882	16078.8	2.332	-0.064
0.660	75310.6	10.922	16121.6	2.338	-0.046
0.724	75394.3	10.935	16170.0	2.345	-0.041
0.791	75683.6	10.977	16223.3	2.353	-0.023
0.856	75648.9	10.972	16282.1	2.361	-0.025
0.925	75491.1	10.949	16347.0	2.371	-0.035
0.987	75145.7	10.899	16411.5	2.380	-0.056

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.50    ADV. RATIO: 3.073  
POWER COEFF: 0.107    RECORD NO: 137.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 137.0

## WIND TUNNEL:

STATIC TEMPERATURE:	274.0 K	33.5 F
STATIC PRESSURE:	76580.0 PA	11.107 PSI
AIR DENSITY:	0.9736 KG/M3	0.06078 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	165.92 M/S	544.39 FT/S

## PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1182.0	
ADVANCE RATIO:	3.073	
POWER COEFFICIENT:	0.107	
BLADE ANGLE (@ X=41" STA):	52.6 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3703 M	53.95 IN.
RADIUS RATIO (@ MID CHORD):	0.570	
REL MACH NO. (@ MID CHORD):	0.579	

RUN DATE:	03-11-1987
RUN TIME:	21:14:04

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 137.0

RADIAL STATION: 3

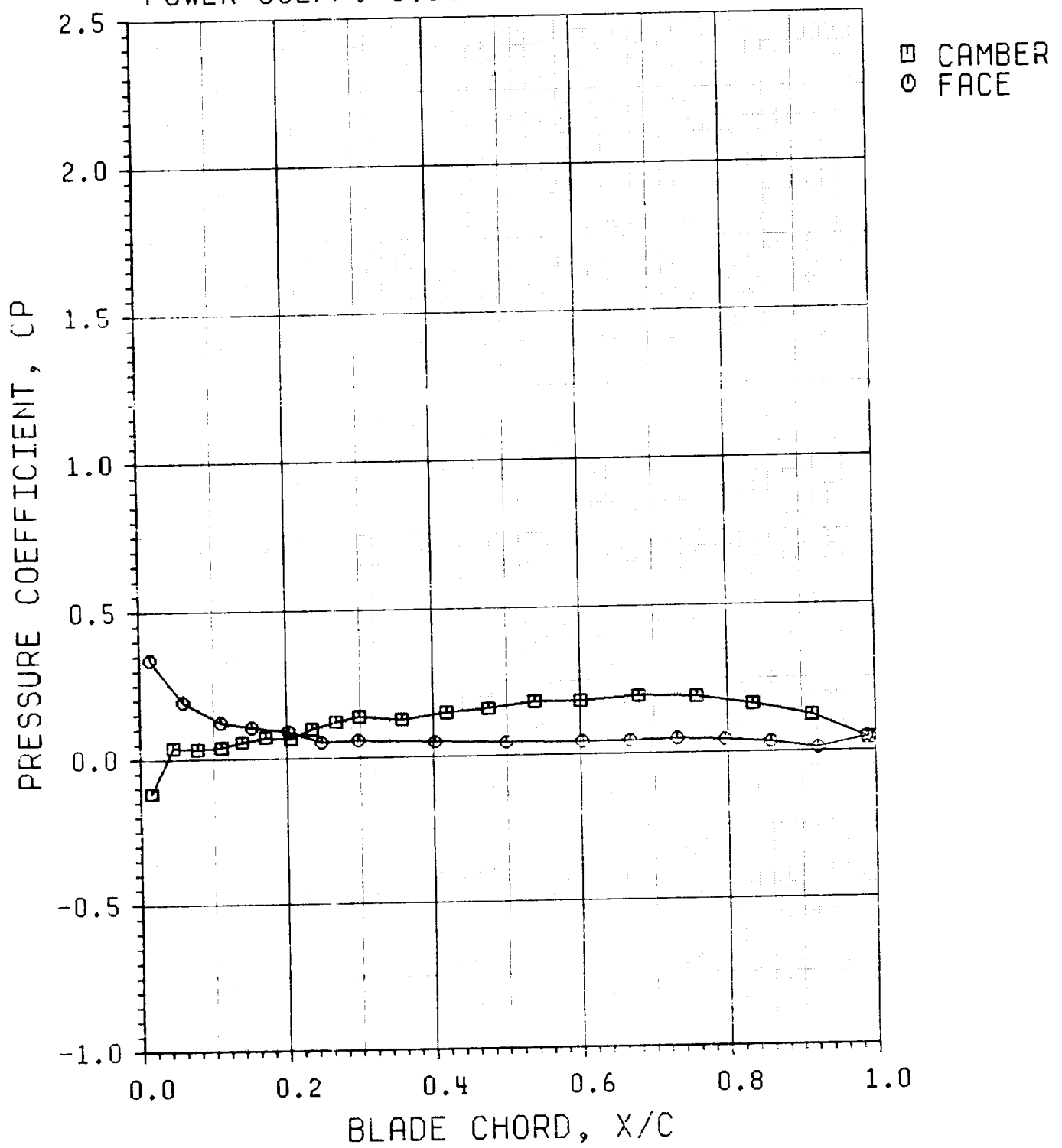
TUNNEL STATIC PRESSURE, PO: 76580.0 PA, 11.107 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	79108.9	11.473	17703.6	2.568	0.143
0.046	76117.5	11.040	17702.5	2.567	-0.026
0.077	75893.2	11.007	17697.0	2.567	-0.039
0.107	75749.1	10.986	17698.8	2.567	-0.047
0.139	75529.2	10.954	17697.6	2.567	-0.059
0.173	75309.5	10.922	17696.7	2.567	-0.072
0.201	75023.2	10.881	17702.2	2.567	-0.088
0.238	74517.2	10.807	17706.9	2.568	-0.116
0.271	74014.6	10.735	17715.1	2.569	-0.145
0.305	73368.5	10.641	17725.9	2.571	-0.181
0.360	73479.0	10.657	17742.2	2.578	-0.175
0.425	73432.2	10.650	17769.6	2.577	-0.177
0.480	73190.3	10.615	17791.4	2.580	-0.191
0.541	72929.6	10.577	17832.1	2.586	-0.205
0.603	72845.4	10.565	17866.4	2.591	-0.209
0.679	72814.8	10.560	17926.0	2.600	-0.210
0.761	72786.9	10.556	17989.5	2.609	-0.211
0.836	78211.2	10.618	18058.2	2.619	-0.187
0.919	74255.6	10.769	18137.8	2.631	-0.128
0.989	76147.7	11.044	18211.4	2.641	-0.024
FACE					
0.018	67289.2	9.759	17715.3	2.569	-0.524
0.061	73089.1	10.600	17715.9	2.569	-0.197
0.107	73649.6	10.682	17714.8	2.569	-0.165
0.151	74395.2	10.790	17716.4	2.569	-0.123
0.202	74291.1	10.775	17721.9	2.570	-0.129
0.248	74712.4	10.836	17727.6	2.571	-0.105
0.294	75582.6	10.962	17787.0	2.572	-0.056
0.395	75458.4	10.944	17766.4	2.577	-0.068
0.502	75368.8	10.931	17816.4	2.584	-0.068
0.597	75664.3	10.974	17864.1	2.591	-0.051
0.666	75665.1	10.974	17916.7	2.599	-0.051
0.729	75344.0	10.927	17954.6	2.604	-0.069
0.788	75480.0	10.947	18003.5	2.611	-0.061
0.853	75848.5	11.001	18065.0	2.620	-0.040
0.924	76003.6	11.023	18132.8	2.630	-0.032
0.988	75796.7	10.993	18205.3	2.640	-0.043

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4    MACH NO: 0.50    ADV. RATIO: 3.068

POWER COEFF: 0.108    RECORD NO: 201.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 201.0

WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	76110.0 PA	11.038 PSI
AIR DENSITY:	0.9606 KG/M3	0.05997 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.53 M/S	546.38 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1188.0	
ADVANCE RATIO:	3.068	
POWER COEFFICIENT:	0.108	
BLADE ANGLE (@ X=41" STA):	51.8 DEG.	
BLADE CHORD:	0.5676 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3708 M	58.97 IN.
RADIUS RATIO (@ MID CHORD):	0.669	
REL MACH NO. (@ MID CHORD):	0.606	

RUN DATE:	08-13-1987
RUN TIME:	18:23:00



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 201.0

RADIAL STATION: 4

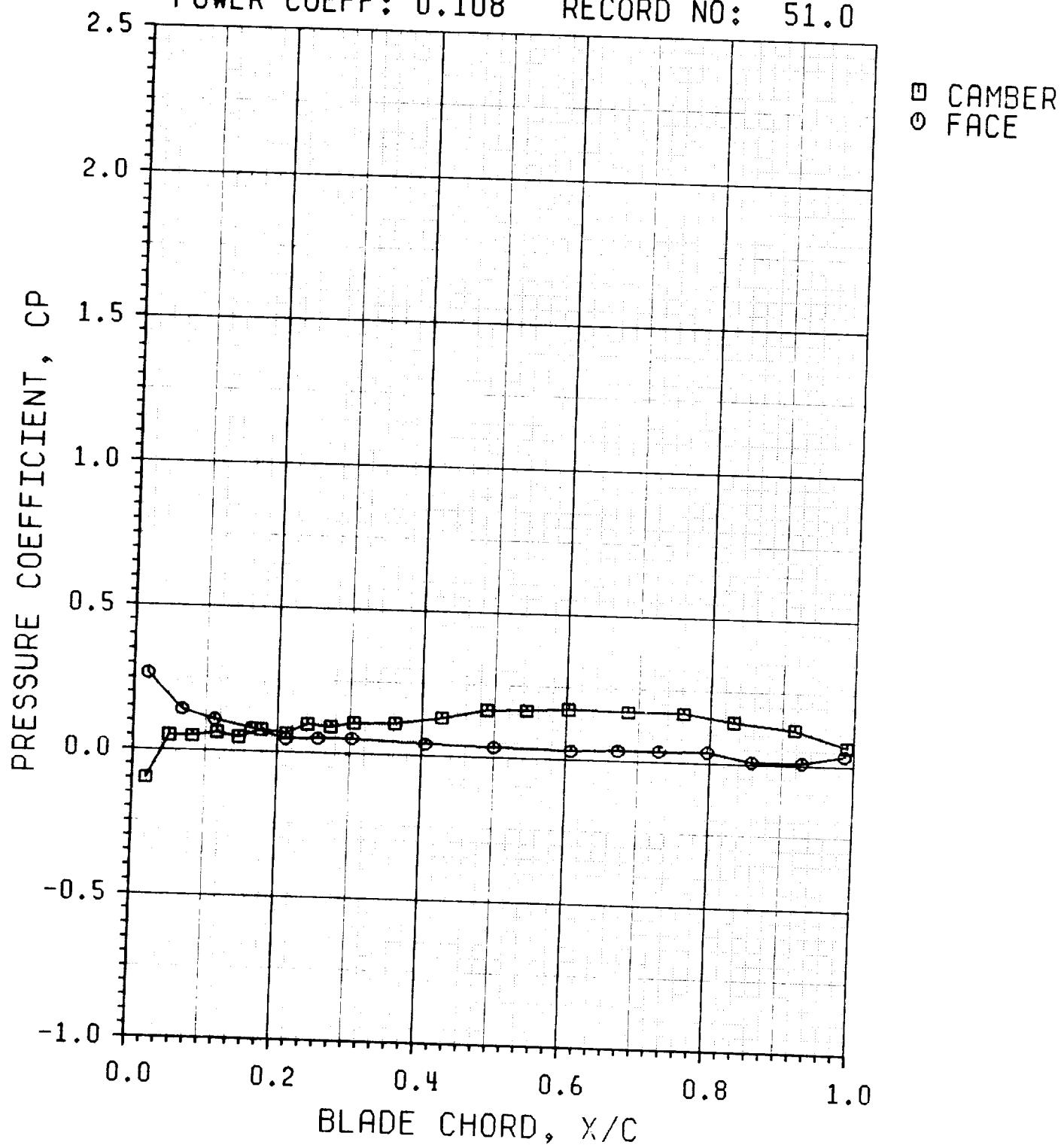
TUNNEL STATIC PRESSURE, PO: 76110.0 PA, 11.038 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	78417.4	11.873	19344.7	2.806	0.119
0.045	75395.4	10.935	19337.7	2.805	-0.037
0.078	75466.6	10.945	19326.7	2.803	-0.033
0.111	75376.7	10.932	19318.8	2.802	-0.038
0.139	75022.1	10.881	19314.8	2.801	-0.056
0.171	74733.4	10.839	19309.5	2.801	-0.071
0.205	74873.8	10.859	19308.2	2.800	-0.064
0.234	74230.3	10.766	19306.1	2.800	-0.097
0.267	73780.2	10.701	19311.1	2.801	-0.121
0.299	73445.6	10.652	19312.2	2.801	-0.138
0.357	73673.1	10.685	19323.9	2.803	-0.126
0.418	73264.7	10.626	19341.3	2.805	-0.147
0.475	73023.8	10.591	19362.5	2.808	-0.159
0.538	72627.9	10.533	19393.5	2.818	-0.180
0.600	72613.6	10.531	19425.5	2.817	-0.180
0.679	72323.1	10.489	19481.4	2.825	-0.194
0.758	72404.8	10.501	19543.7	2.834	-0.190
0.834	72937.9	10.578	19616.0	2.845	-0.162
0.914	73687.1	10.687	19701.3	2.857	-0.123
0.990	75277.4	10.918	19785.6	2.870	-0.042
FACE					
0.015	69581.5	10.092	19361.3	2.808	-0.337
0.059	72395.5	10.500	19353.3	2.807	-0.192
0.110	73734.6	10.694	19341.0	2.805	-0.123
0.152	74079.1	10.744	19334.7	2.804	-0.105
0.202	74354.7	10.784	19334.1	2.804	-0.091
0.247	75099.1	10.892	19332.3	2.804	-0.052
0.297	75005.8	10.878	19336.0	2.804	-0.057
0.402	75166.7	10.902	19355.4	2.807	-0.049
0.499	75252.8	10.914	19397.2	2.813	-0.044
0.602	75274.4	10.917	19449.3	2.821	-0.048
0.667	75273.6	10.917	19478.8	2.825	-0.043
0.731	75199.6	10.906	19532.4	2.825	-0.047
0.796	75285.2	10.919	19588.8	2.833	-0.042
0.858	75488.6	10.948	19643.0	2.841	-0.032
0.922	75906.6	11.009	19709.0	2.849	-0.010
0.988	75201.1	10.907	19784.8	2.858	-0.046

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.50 ADV. RATIO: 3.063

POWER COEFF: 0.108 RECORD NO: 51.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 51.0

## WIND TUNNEL:

STATIC TEMPERATURE:	273.0 K	31.7 F
STATIC PRESSURE:	76570.0 PA	11.105 PSI
AIR DENSITY:	0.9770 KG/M3	0.06100 LBF/FT3
SPEED OF SOUND:	331.24 M/S	1086.80 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	165.62 M/S	543.40 FT/S

## PROPFAN:

RADIAL STATION:	5	
ROTOR SPEED (RPM):	1183.0	
ADVANCE RATIO:	3.063	
POWER COEFFICIENT:	0.108	
BLADE ANGLE (@ X=41" STA):	50.9 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3713 M	53.99 IN.
RADIUS RATIO (@ MID CHORD):	0.739	
REL MACH NO. (@ MID CHORD):	0.627	

RUN DATE:	03-06-1987
RUN TIME:	17:29:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 51.0

RADIAL STATION: 5

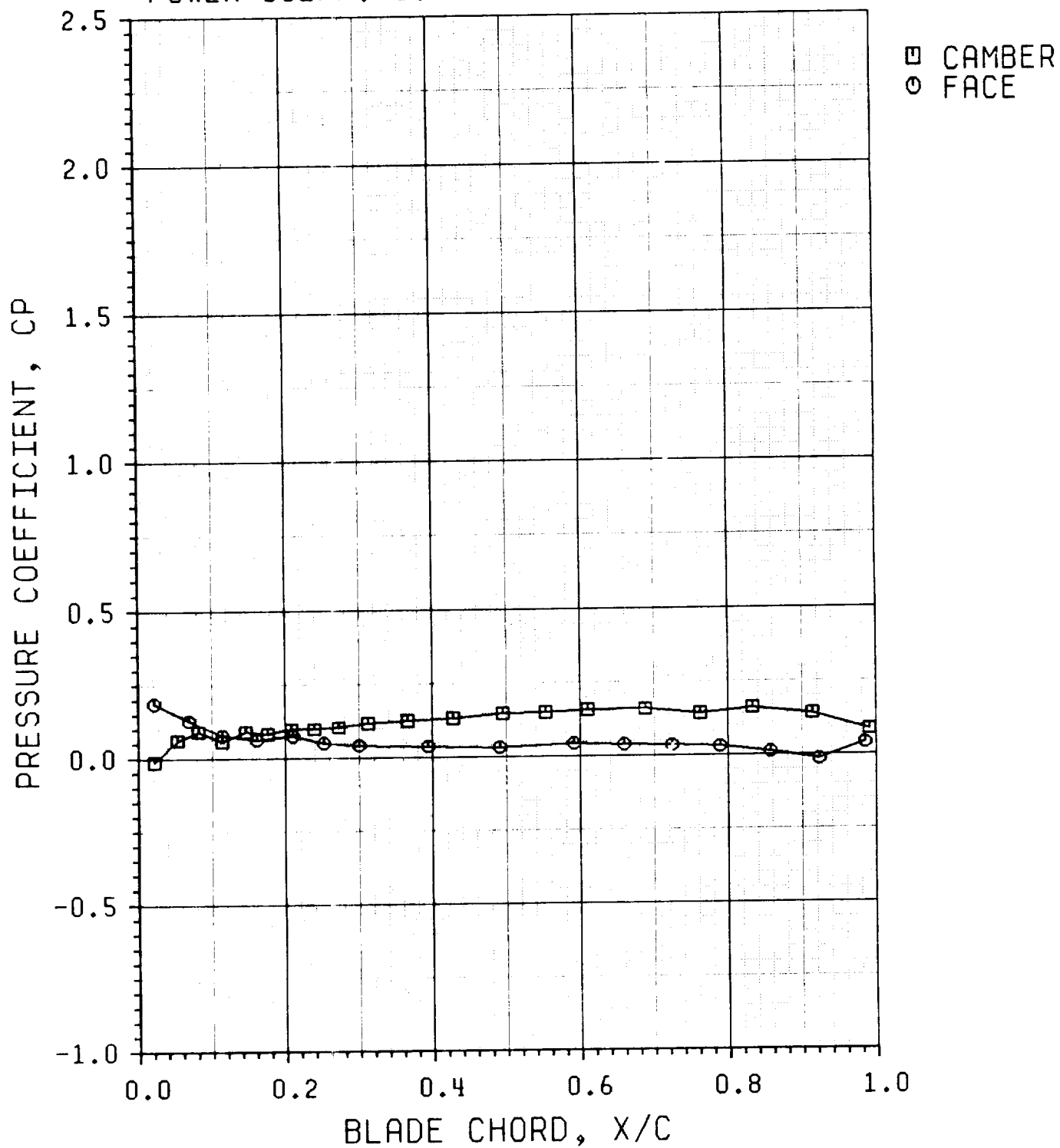
TUNNEL STATIC PRESSURE, PO: 76570.0 PA, 11.105 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	78639.5	11.405	20929.2	3.035	0.099
0.050	75514.2	10.952	20915.2	3.033	-0.050
0.082	75545.3	10.957	20900.4	3.031	-0.049
0.116	75276.1	10.917	20889.6	3.030	-0.062
0.146	75563.4	10.959	20880.3	3.028	-0.048
0.177	74994.4	10.877	20873.7	3.027	-0.075
0.212	75232.7	10.911	20868.6	3.027	-0.064
0.241	74538.8	10.810	20865.9	3.026	-0.097
0.273	74696.3	10.838	20864.2	3.026	-0.090
0.305	74369.1	10.786	20863.9	3.026	-0.105
0.362	74837.9	10.781	20870.8	3.027	-0.107
0.427	73827.0	10.707	20885.0	3.029	-0.131
0.489	78194.7	10.616	20899.6	3.031	-0.162
0.544	73140.2	10.608	20922.2	3.034	-0.164
0.602	72951.6	10.580	20955.7	3.039	-0.173
0.685	73020.7	10.590	21004.4	3.046	-0.169
0.762	73012.7	10.589	21059.8	3.054	-0.169
0.832	73541.5	10.666	21118.4	3.063	-0.143
0.917	74002.4	10.733	21200.9	3.075	-0.121
0.990	75215.3	10.909	21277.7	3.086	-0.064
FACE					
0.019	71005.4	10.298	20941.4	3.037	-0.266
0.067	73616.9	10.677	20919.6	3.034	-0.141
0.112	74319.8	10.779	20899.2	3.031	-0.108
0.163	74910.2	10.864	20888.6	3.030	-0.079
0.211	75620.2	10.967	20883.9	3.029	-0.045
0.256	75541.1	10.956	20880.7	3.028	-0.049
0.303	75501.1	10.950	20878.7	3.028	-0.051
0.405	75749.9	10.986	20884.4	3.029	-0.039
0.500	75864.1	11.003	20907.5	3.032	-0.034
0.607	75962.0	11.017	20960.3	3.040	-0.029
0.672	75850.1	11.001	20993.1	3.045	-0.034
0.729	75815.6	10.996	21035.3	3.051	-0.036
0.796	75795.1	10.993	21083.8	3.058	-0.037
0.858	76424.6	11.084	21134.2	3.065	-0.007
0.928	76394.4	11.080	21203.2	3.075	-0.008
0.987	75856.1	11.002	21268.7	3.085	-0.034

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.50 ADV. RATIO: 3.064

POWER COEFF: 0.110 RECORD NO: 188.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 188.0

WIND TUNNEL:

STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	76170.0 PA	11.047 PSI
AIR DENSITY:	0.9510 KG/M3	0.05937 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.43 M/S	549.34 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1196.0	
ADVANCE RATIO:	3.064	
POWER COEFFICIENT:	0.110	
BLADE ANGLE (@ X=41" STA):	52.0 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3707 M	53.96 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.649	

RUN DATE:	03-13-1987
RUN TIME:	14:19:35

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 188.0

RADIAL STATION: 6

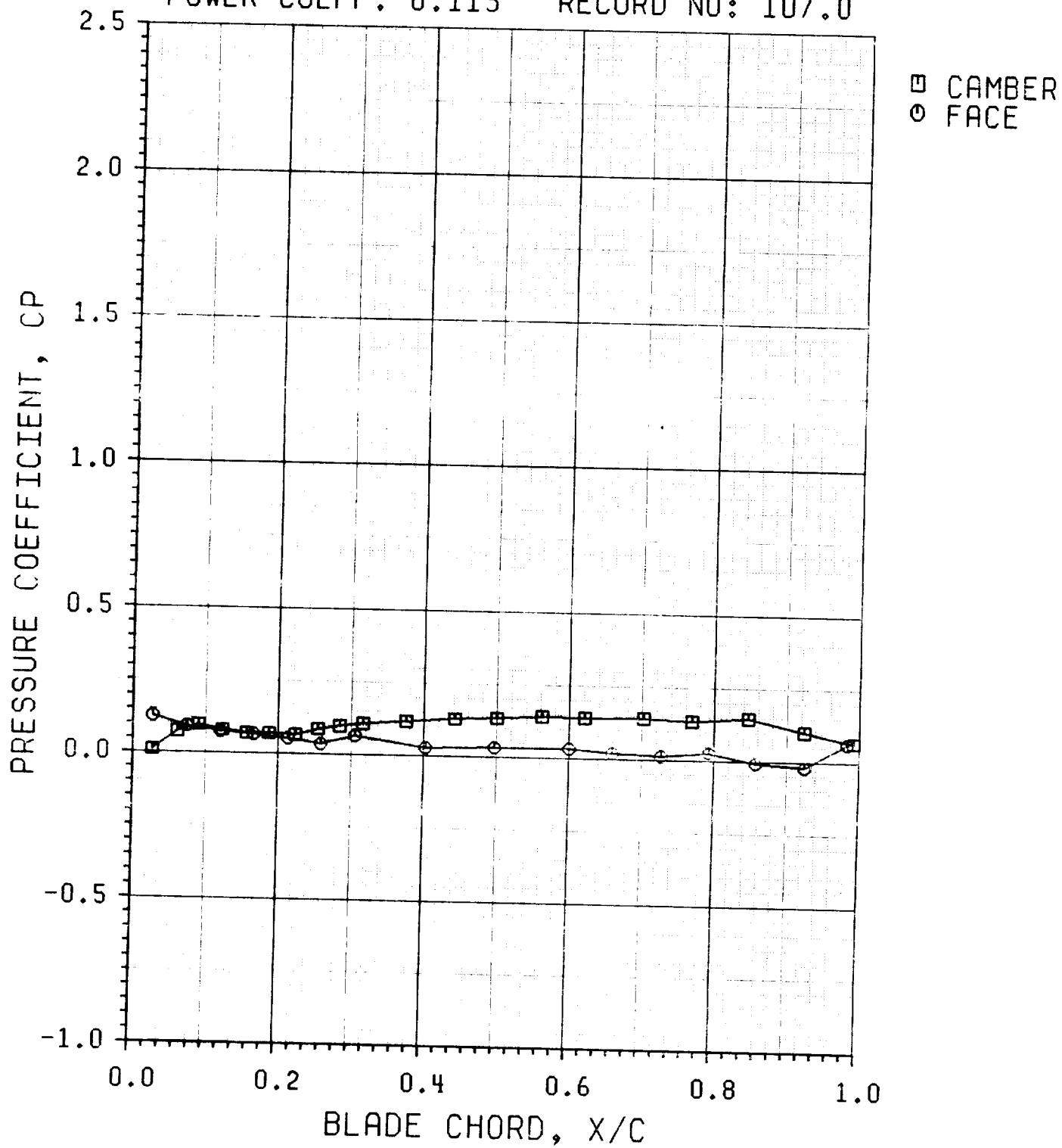
TUNNEL STATIC PRESSURE, PO: 76170.0 PA, 11.047 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	76454.1	11.088	22287.1	3.232	0.013
0.053	74808.6	10.850	22277.8	3.231	-0.061
0.082	74142.4	10.753	22270.6	3.230	-0.091
0.114	74870.6	10.859	22270.0	3.230	-0.058
0.146	74176.5	10.758	22265.8	3.229	-0.090
0.176	74335.9	10.781	22254.4	3.228	-0.082
0.208	73962.1	10.727	22252.7	3.227	-0.099
0.239	73972.2	10.728	22255.1	3.228	-0.099
0.272	73846.9	10.710	22253.7	3.228	-0.104
0.312	73548.4	10.667	22257.7	3.228	-0.118
0.366	73377.5	10.642	22265.3	3.229	-0.125
0.428	73212.9	10.618	22279.6	3.231	-0.133
0.495	72884.4	10.571	22292.9	3.233	-0.147
0.553	72831.2	10.563	22310.4	3.236	-0.150
0.610	72635.6	10.535	22332.9	3.239	-0.158
0.688	72604.7	10.530	22373.9	3.245	-0.159
0.762	72982.9	10.585	22420.1	3.252	-0.142
0.833	72541.2	10.521	22470.3	3.259	-0.161
0.914	72987.1	10.586	22530.0	3.268	-0.141
0.991	74222.1	10.765	22591.8	3.277	-0.086
FACE					
0.022	71984.9	10.440	22293.1	3.233	-0.188
0.069	73298.1	10.631	22279.5	3.231	-0.129
0.114	74436.0	10.796	22269.6	3.230	-0.078
0.161	74759.4	10.843	22259.3	3.228	-0.063
0.210	74501.7	10.805	22257.4	3.228	-0.075
0.252	75064.5	10.887	22254.3	3.228	-0.050
0.300	75246.9	10.913	22250.6	3.227	-0.041
0.394	75367.4	10.931	22262.7	3.229	-0.036
0.491	75486.2	10.948	22280.9	3.231	-0.031
0.591	75221.5	10.910	22319.1	3.237	-0.042
0.659	75332.4	10.926	22345.0	3.241	-0.037
0.724	75399.6	10.935	22381.5	3.246	-0.034
0.789	75528.5	10.954	22417.4	3.251	-0.029
0.857	75955.9	11.016	22472.1	3.259	-0.010
0.923	76529.4	11.099	22524.6	3.267	0.016
0.985	75290.4	10.920	22577.7	3.275	-0.039

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.50 ADV. RATIO: 3.070

POWER COEFF: 0.113 RECORD NO: 107.0





LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 107.0

WIND TUNNEL:

STATIC TEMPERATURE:	275.0 K	35.8 F
STATIC PRESSURE:	76400.0 PA	11.080 PSI
AIR DENSITY:	0.9678 KG/M3	0.06042 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.23 M/S	545.39 FT/S

PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1185.0	
ADVANCE RATIO:	3.070	
POWER COEFFICIENT:	0.113	
BLADE ANGLE (@ X=41" STA):	51.8 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3708 M	53.97 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	0.666	

RUN DATE:	03-10-1987
RUN TIME:	20:10:41

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 107.0

RADIAL STATION: 7

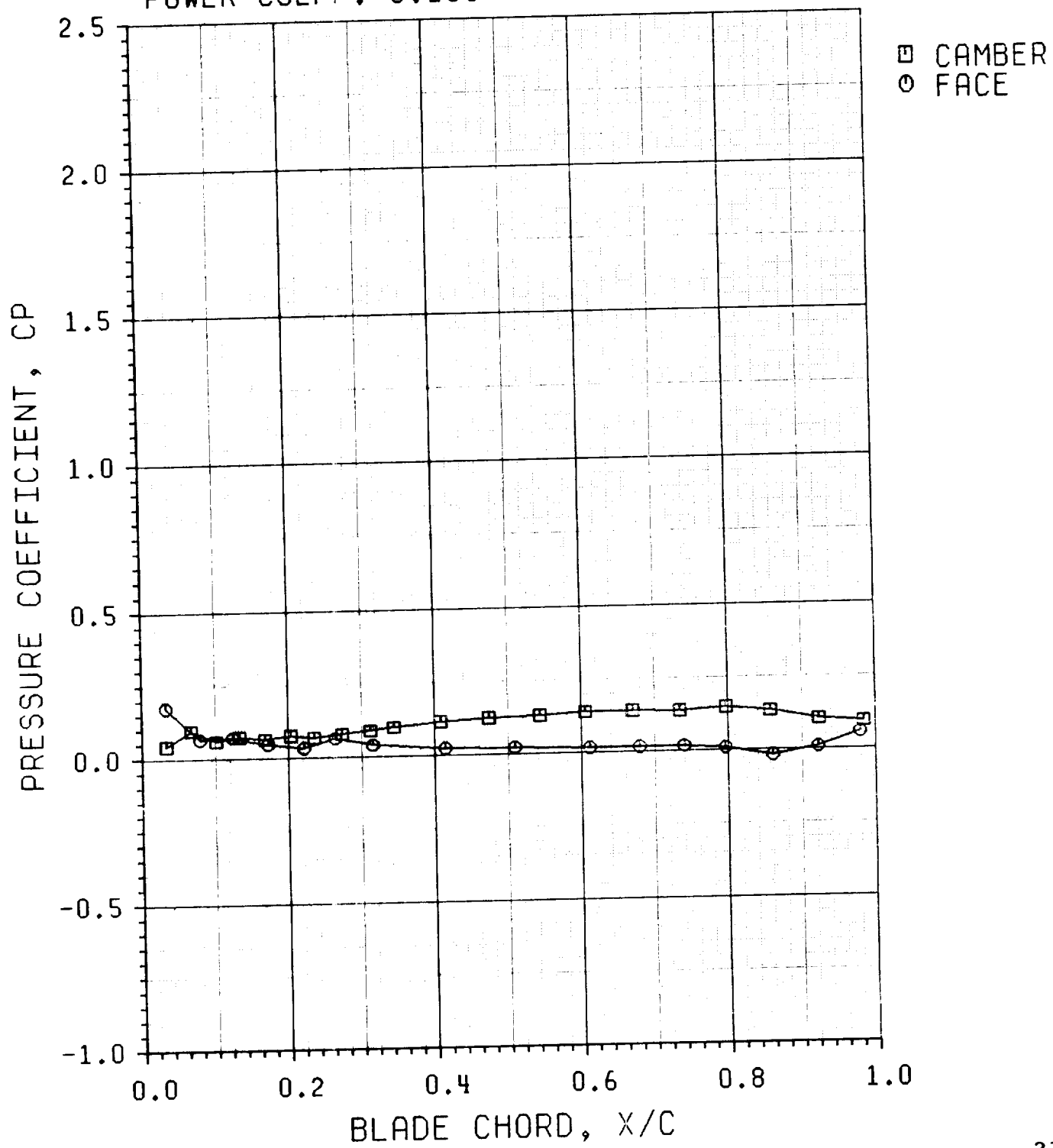
TUNNEL STATIC PRESSURE, PO: 76400.0 PA, 11.080 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	76184.3	11.049	23615.9	3.425	-0.009
0.061	74685.4	10.832	23615.0	3.425	-0.073
0.090	74141.4	10.753	23615.1	3.425	-0.096
0.123	74532.2	10.810	23611.5	3.424	-0.079
0.156	74773.1	10.845	23607.8	3.424	-0.069
0.187	74783.2	10.846	23602.1	3.423	-0.069
0.223	74859.6	10.857	23607.7	3.424	-0.065
0.254	74376.5	10.787	23618.5	3.425	-0.086
0.284	74092.2	10.746	23613.0	3.425	-0.098
0.316	73866.9	10.713	23616.6	3.425	-0.107
0.375	73620.3	10.677	23622.4	3.426	-0.118
0.442	73356.6	10.639	23635.2	3.428	-0.129
0.500	73241.6	10.622	23655.1	3.431	-0.134
0.562	73041.2	10.593	23676.5	3.434	-0.142
0.621	73075.2	10.598	23695.5	3.437	-0.140
0.702	72998.4	10.587	23739.2	3.443	-0.143
0.769	73201.6	10.617	23769.9	3.447	-0.135
0.846	72910.2	10.574	23812.2	3.454	-0.147
0.924	73955.6	10.726	23863.8	3.461	-0.102
0.992	74831.0	10.853	23909.1	3.468	-0.066
FACE					
0.027	73437.1	10.651	23612.3	3.425	-0.125
0.074	74248.6	10.768	23611.7	3.424	-0.091
0.120	74638.9	10.825	23599.6	3.423	-0.075
0.166	74857.4	10.857	23605.5	3.424	-0.065
0.213	75177.4	10.903	23594.1	3.422	-0.052
0.258	75585.2	10.962	23600.0	3.423	-0.035
0.305	74871.7	10.859	23604.0	3.423	-0.065
0.402	75768.7	10.989	23618.2	3.425	-0.027
0.497	75628.2	10.969	23643.6	3.429	-0.033
0.600	75633.1	10.969	23672.4	3.433	-0.032
0.660	75915.5	11.010	23694.5	3.436	-0.020
0.727	76108.2	11.038	23729.5	3.442	-0.012
0.793	75783.3	10.991	23768.2	3.447	-0.026
0.857	76575.2	11.106	23809.4	3.453	0.007
0.925	76897.2	11.153	23854.5	3.460	0.021
0.983	74885.2	10.861	23899.9	3.466	-0.063

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.50    ADV. RATIO: 3.058

POWER COEFF: 0.106    RECORD NO: 174.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 174.0

WIND TUNNEL:

STATIC TEMPERATURE:	274.0 K	33.5 F
STATIC PRESSURE:	76560.0 PA	11.104 PSI
AIR DENSITY:	0.9733 KG/M3	0.06076 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	165.92 M/S	544.39 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1187.0	
ADVANCE RATIO:	3.058	
POWER COEFFICIENT:	0.106	
BLADE ANGLE (@ X=41" STA):	51.2 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3711 M	53.98 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	0.683	

RUN DATE:	03-12-1987
RUN TIME:	20:46:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 174.0

RADIAL STATION: 8

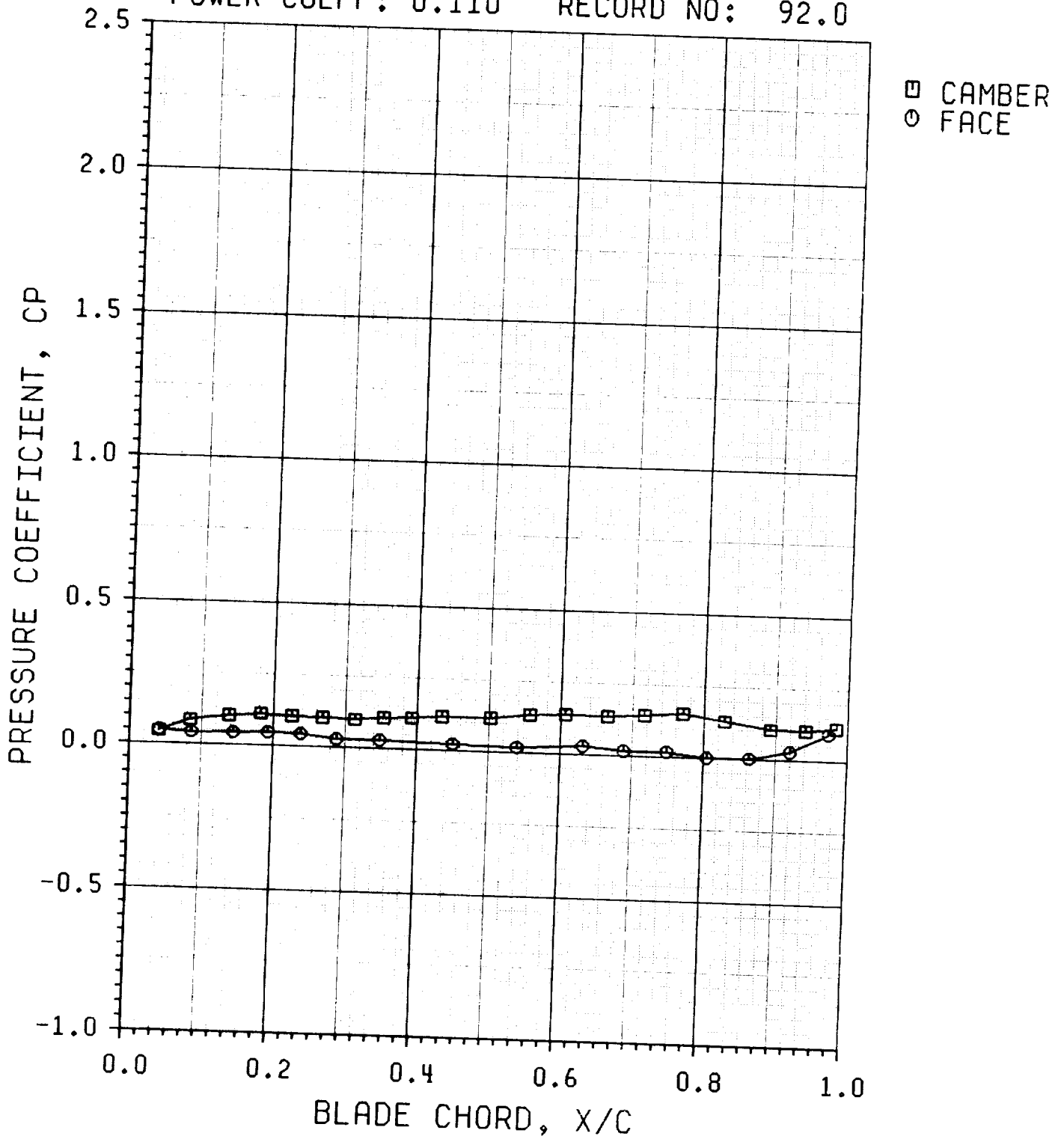
TUNNEL STATIC PRESSURE, PO: 76560.0 PA, 11.104 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.038	75503.5	10.950	24853.3	3.605	-0.043
0.067	74181.2	10.759	24852.3	3.604	-0.096
0.101	76100.6	10.892	24850.7	3.604	-0.059
0.133	74756.6	10.842	24851.1	3.604	-0.073
0.168	74964.4	10.872	24858.8	3.605	-0.064
0.203	74689.5	10.832	24856.2	3.605	-0.075
0.235	74880.7	10.860	24855.2	3.605	-0.068
0.273	74593.2	10.818	24864.2	3.606	-0.079
0.312	74335.7	10.781	24871.2	3.607	-0.089
0.344	74099.2	10.747	24875.1	3.608	-0.099
0.408	73703.1	10.689	24887.9	3.610	-0.115
0.474	73459.0	10.654	24900.8	3.611	-0.125
0.543	73321.0	10.634	24915.6	3.614	-0.130
0.605	73088.3	10.600	24940.6	3.617	-0.139
0.670	73076.9	10.599	24962.3	3.620	-0.140
0.734	73106.4	10.603	24984.7	3.624	-0.138
0.797	72849.7	10.566	25018.5	3.628	-0.148
0.857	73204.7	10.617	25037.2	3.631	-0.134
0.923	73944.2	10.724	25079.8	3.637	-0.104
0.984	74200.7	10.762	25104.2	3.641	-0.094
FACE					
0.033	72204.5	10.472	24845.0	3.603	-0.175
0.079	74948.7	10.870	24842.8	3.603	-0.065
0.124	74784.7	10.846	24847.1	3.604	-0.071
0.172	75421.2	10.939	24842.9	3.603	-0.046
0.221	75738.3	10.985	24839.7	3.603	-0.033
0.264	74959.9	10.872	24846.1	3.603	-0.064
0.315	75590.2	10.963	24851.9	3.604	-0.039
0.414	75976.2	11.019	24869.7	3.607	-0.023
0.509	76037.2	11.028	24890.8	3.610	-0.021
0.611	76173.9	11.048	24923.5	3.615	-0.015
0.679	76194.9	11.051	24944.6	3.618	-0.015
0.740	76169.8	11.047	24967.7	3.621	-0.016
0.796	76378.4	11.077	24992.0	3.625	-0.007
0.860	77067.1	11.177	25022.7	3.629	0.020
0.922	76378.9	11.077	25064.9	3.635	-0.007
0.979	75109.1	10.893	25096.5	3.640	-0.058

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.50 ADV. RATIO: 3.083

POWER COEFF: 0.110 RECORD NO: 92.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 92.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	76230.0 PA	11.056 PSI
AIR DENSITY:	0.9450 KG/M3	0.05900 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.03 M/S	551.30 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1193.0	
ADVANCE RATIO:	3.083	
POWER COEFFICIENT:	0.110	
BLADE ANGLE (@ X=41" STA):	52.1 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3706 M	53.96 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	0.692	

RUN DATE:	03-10-1987
RUN TIME:	15:25:07

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 92.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 76230.0 PA, 11.056 PSI

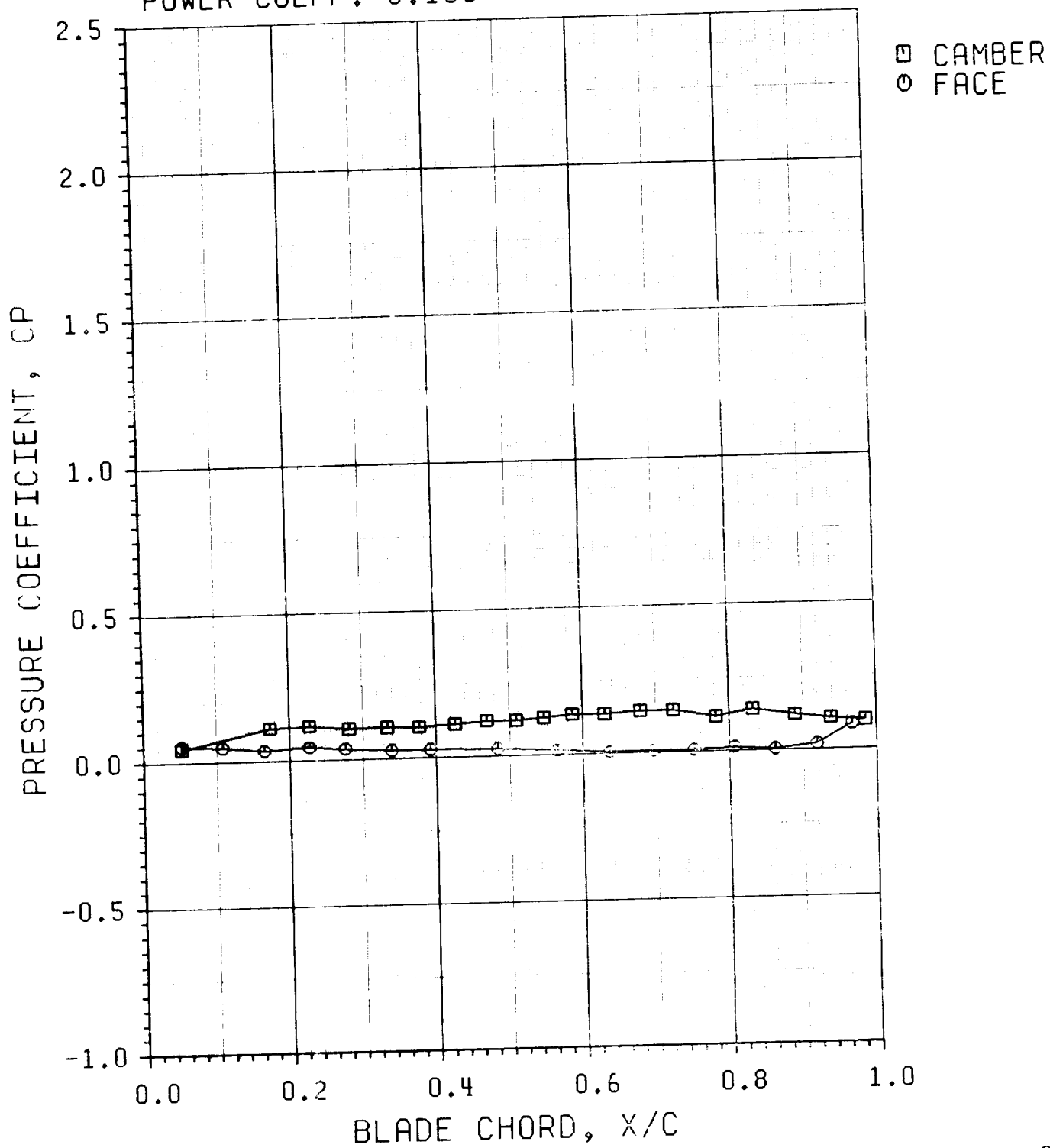
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	75103.6	10.892	25497.0	3.698	-0.044
0.084	74081.2	10.744	25501.9	3.699	-0.084
0.138	73613.6	10.676	25503.4	3.699	-0.103
0.182	73402.6	10.646	25502.6	3.699	-0.111
0.225	73546.6	10.667	25509.3	3.700	-0.105
0.268	73622.9	10.678	25504.5	3.699	-0.102
0.313	73709.6	10.690	25510.6	3.700	-0.099
0.353	73485.3	10.658	25512.9	3.700	-0.108
0.392	73459.4	10.654	25519.5	3.701	-0.109
0.434	73251.6	10.624	25522.1	3.702	-0.117
0.502	73253.1	10.624	25532.2	3.703	-0.117
0.556	72866.1	10.568	25542.0	3.704	-0.132
0.606	72694.2	10.543	25557.0	3.707	-0.138
0.665	72771.4	10.554	25561.5	3.707	-0.135
0.716	72581.2	10.527	25574.3	3.709	-0.143
0.770	72322.0	10.489	25582.7	3.710	-0.153
0.828	72938.7	10.578	25601.1	3.713	-0.129
0.892	73560.1	10.669	25615.6	3.715	-0.104
0.941	73579.9	10.671	25627.7	3.717	-0.103
0.984	73369.2	10.641	25636.1	3.718	-0.112
FACE					
0.041	75034.6	10.882	25492.7	3.697	-0.047
0.086	75182.4	10.904	25494.9	3.698	-0.041
0.144	75171.1	10.902	25491.6	3.697	-0.042
0.192	75091.2	10.891	25492.7	3.697	-0.045
0.238	75148.9	10.899	25493.7	3.697	-0.042
0.288	75531.7	10.955	25496.5	3.698	-0.027
0.348	75553.6	10.958	25502.2	3.699	-0.027
0.450	75705.9	10.980	25509.0	3.700	-0.021
0.539	75822.8	10.997	25529.0	3.703	-0.016
0.631	75550.9	10.957	25540.3	3.704	-0.027
0.688	75839.3	10.999	25553.7	3.706	-0.015
0.748	75833.4	10.998	25564.1	3.708	-0.016
0.804	76241.6	11.058	25583.7	3.710	0.000
0.863	76214.1	11.054	25596.7	3.712	-0.001
0.920	75516.1	10.952	25611.4	3.714	-0.028
0.973	73887.4	10.716	25627.4	3.717	-0.091

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10    MACH NO: 0.50    ADV. RATIO: 3.064

POWER COEFF: 0.105    RECORD NO: 152.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 152.0

WIND TUNNEL:

STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	76460.0 PA	11.089 PSI
AIR DENSITY:	0.9546 KG/M3	0.05960 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.43 M/S	549.34 FT/S

PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1196.0	
ADVANCE RATIO:	3.064	
POWER COEFFICIENT:	0.105	
BLADE ANGLE (@ X=41" STA):	51.7 DEG.	
BLADE CHORD:	0.2064 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3708 M	53.97 IN.
RADIUS RATIO (@ MID CHORD):	0.965	
REL MACH NO. (@ MID CHORD):	0.703	

RUN DATE:	03-12-1987
RUN TIME:	14:28:25

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

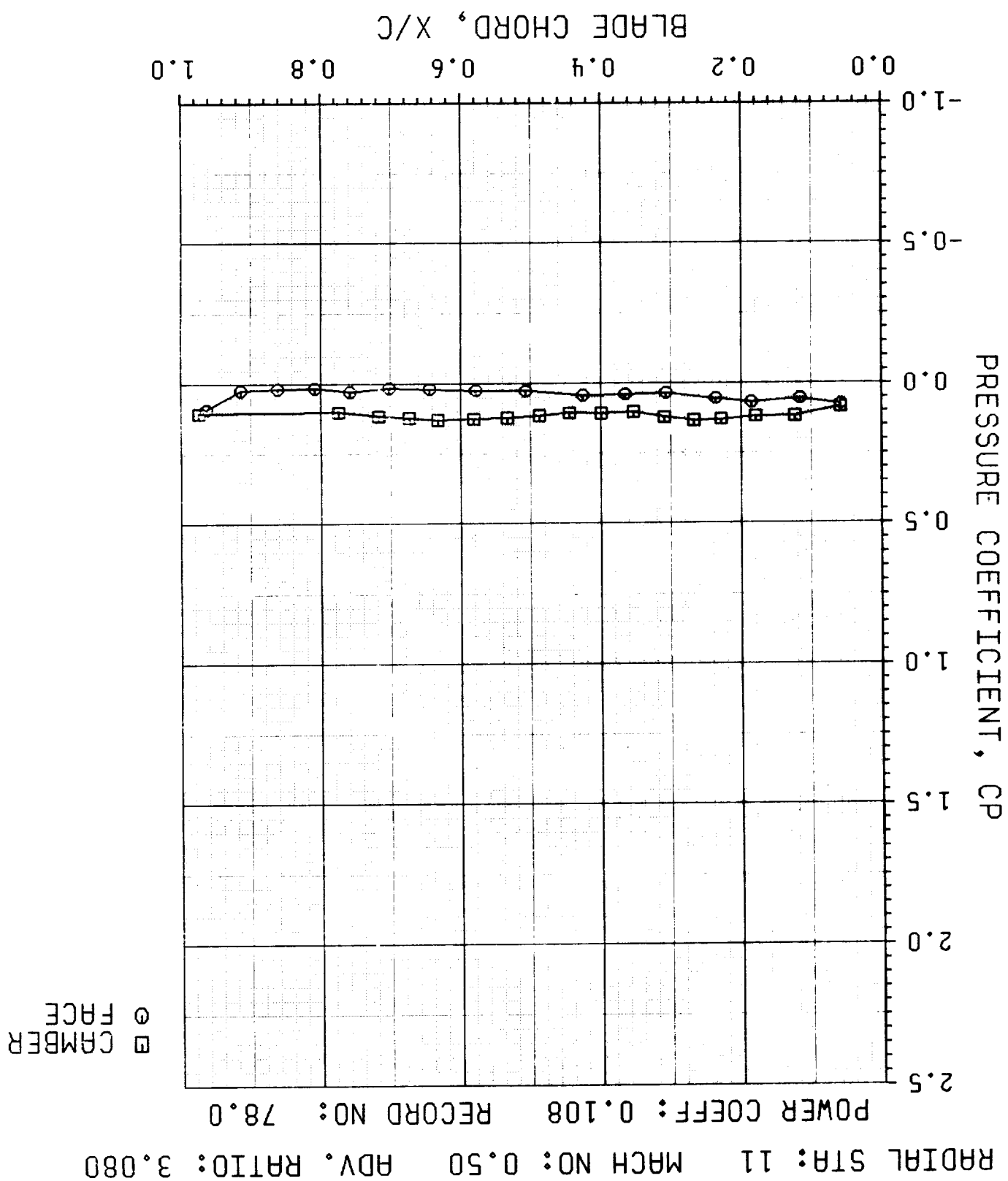
RECORD NUMBER: 152.0

RADIAL STATION: 10

TUNNEL STATIC PRESSURE, PO: 76460.0 PA, 11.089 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	75340.6	10.927	26448.4	3.836	-0.042
0.113	*****	*****	26453.0	3.837	*****
0.173	73518.3	10.663	26450.4	3.836	-0.111
0.227	73403.0	10.646	26449.6	3.836	-0.116
0.281	73683.2	10.686	26451.7	3.836	-0.105
0.333	73634.6	10.679	26460.7	3.838	-0.107
0.377	73645.9	10.681	26455.4	3.837	-0.106
0.426	73496.2	10.659	26461.4	3.838	-0.112
0.469	73258.7	10.625	26469.7	3.839	-0.121
0.509	73274.1	10.627	26468.7	3.839	-0.120
0.547	73073.5	10.598	26472.8	3.839	-0.128
0.586	72860.7	10.567	26481.4	3.841	-0.136
0.630	72890.7	10.572	26478.6	3.840	-0.135
0.679	72669.6	10.539	26486.9	3.841	-0.143
0.724	72684.5	10.542	26494.0	3.842	-0.143
0.782	73320.1	10.634	26499.6	3.843	-0.118
0.832	72739.5	10.550	26508.8	3.845	-0.140
0.889	73312.4	10.633	26517.2	3.846	-0.119
0.938	73660.4	10.683	26530.0	3.848	-0.106
0.985	73861.7	10.712	26534.9	3.848	-0.098
FACE					
0.052	75079.9	10.889	26432.8	3.834	-0.052
0.108	75211.2	10.908	26433.3	3.834	-0.047
0.165	75531.9	10.955	26435.0	3.834	-0.035
0.227	75302.1	10.921	26434.2	3.834	-0.044
0.276	75504.4	10.951	26432.1	3.834	-0.036
0.339	75725.6	10.983	26432.5	3.834	-0.028
0.392	75736.4	10.984	26435.1	3.834	-0.027
0.484	75803.6	10.994	26445.1	3.835	-0.025
0.565	76089.6	11.035	26453.0	3.837	-0.014
0.637	76355.7	11.074	26457.4	3.837	-0.004
0.697	76323.7	11.069	26466.3	3.838	-0.005
0.752	76330.1	11.070	26480.9	3.841	-0.005
0.807	76178.5	11.048	26484.8	3.841	-0.011
0.862	76371.4	11.076	26497.7	3.843	-0.003
0.919	76016.4	11.025	26511.1	3.845	-0.017
0.967	74221.3	10.765	26517.3	3.846	-0.084

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 78.0

WIND TUNNEL:

STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	76230.0 PA	11.056 PSI
AIR DENSITY:	0.9656 KG/M3	0.06028 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.23 M/S	545.39 FT/S

PROPFAN:

RADIAL STATION:	11	
ROTOR SPEED (RPM):	1181.0	
ADVANCE RATIO:	8.080	
POWER COEFFICIENT:	0.108	
BLADE ANGLE (@ X=41" STA):	51.8 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3708 M	53.97 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.705	

RUN DATE:	03-09-1987
RUN TIME:	21:39:21

LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 78.0

RADIAL STATION: 11

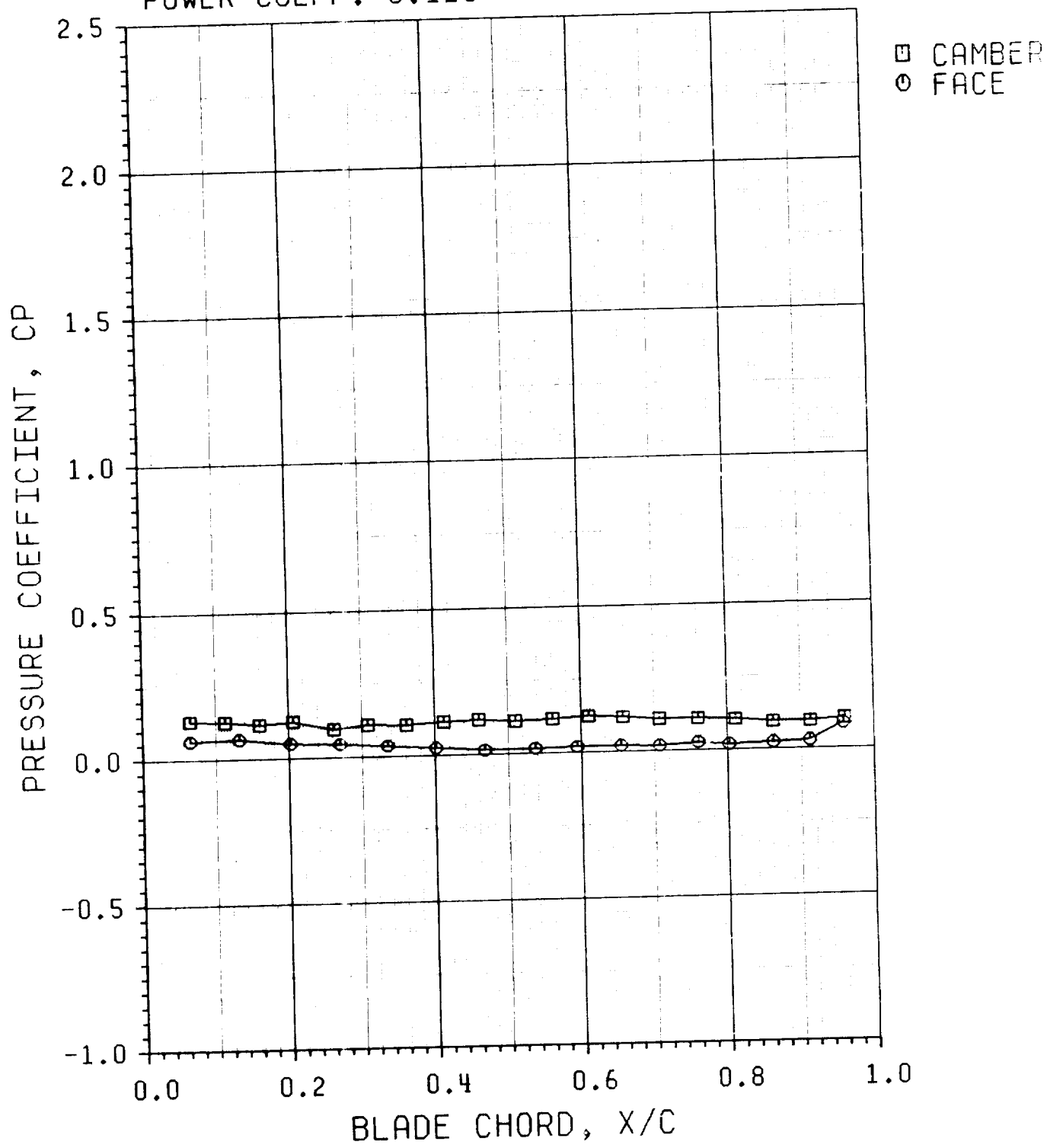
TUNNEL STATIC PRESSURE, PO: 76230.0 PA, 11.056 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	73975.7	10.729	26508.1	3.845	-0.085
0.123	73100.3	10.602	26518.2	3.846	-0.118
0.179	73064.6	10.597	26523.8	3.847	-0.119
0.228	72820.9	10.561	26526.0	3.847	-0.129
0.267	72692.9	10.543	26529.3	3.848	-0.133
0.309	73016.9	10.590	26525.2	3.847	-0.121
0.353	73502.7	10.660	26527.6	3.847	-0.103
0.399	73357.5	10.639	26530.0	3.848	-0.108
0.444	73426.8	10.649	26538.8	3.848	-0.106
0.487	73170.0	10.612	26539.6	3.849	-0.115
0.533	72979.9	10.584	26546.6	3.850	-0.122
0.581	72894.2	10.572	26551.3	3.851	-0.126
0.632	72783.4	10.556	26555.5	3.851	-0.130
0.673	72968.7	10.583	26560.6	3.852	-0.123
0.717	73139.4	10.608	26559.0	3.852	-0.116
0.774	73550.6	10.667	26568.7	3.853	-0.101
0.822	*****	*****	26572.1	3.854	*****
0.875	*****	*****	26576.5	3.854	*****
0.928	*****	*****	26594.8	3.857	*****
0.974	73405.6	10.646	26597.0	3.857	-0.106
FACE					
0.058	74281.4	10.773	26502.2	3.844	-0.074
0.116	74800.4	10.849	26505.1	3.844	-0.054
0.185	74428.0	10.794	26501.3	3.844	-0.068
0.236	74811.6	10.850	26508.1	3.845	-0.054
0.307	75336.0	10.926	26508.0	3.845	-0.034
0.365	75199.0	10.906	26510.3	3.845	-0.039
0.425	75120.6	10.895	26514.0	3.845	-0.042
0.507	75547.2	10.957	26514.5	3.845	-0.026
0.578	75598.6	10.964	26524.9	3.847	-0.024
0.644	75713.2	10.981	26533.0	3.848	-0.019
0.702	75839.1	10.999	26536.0	3.849	-0.015
0.758	75480.4	10.947	26546.2	3.850	-0.028
0.808	75832.3	10.998	26553.9	3.851	-0.015
0.861	75772.9	10.990	26560.1	3.852	-0.017
0.914	75608.1	10.966	26567.5	3.853	-0.023
0.963	73803.6	10.704	26575.8	3.854	-0.091

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.50    ADV. RATIO: 3.076

POWER COEFF: 0.110    RECORD NO: 123.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 128.0

WIND TUNNEL:

STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	76370.0 PA	11.076 PSI
AIR DENSITY:	0.9604 KG/M3	0.05996 LBF/FT3
SPEED OF SOUND:	333.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.86 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1187.0	
ADVANCE RATIO:	3.076	
POWER COEFFICIENT:	0.110	
BLADE ANGLE (@ X=41" STA):	52.1 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3706 M	53.96 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.709	

RUN DATE:	03-11-1987
RUN TIME:	17:31:12



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 123.0

RADIAL STATION: 12

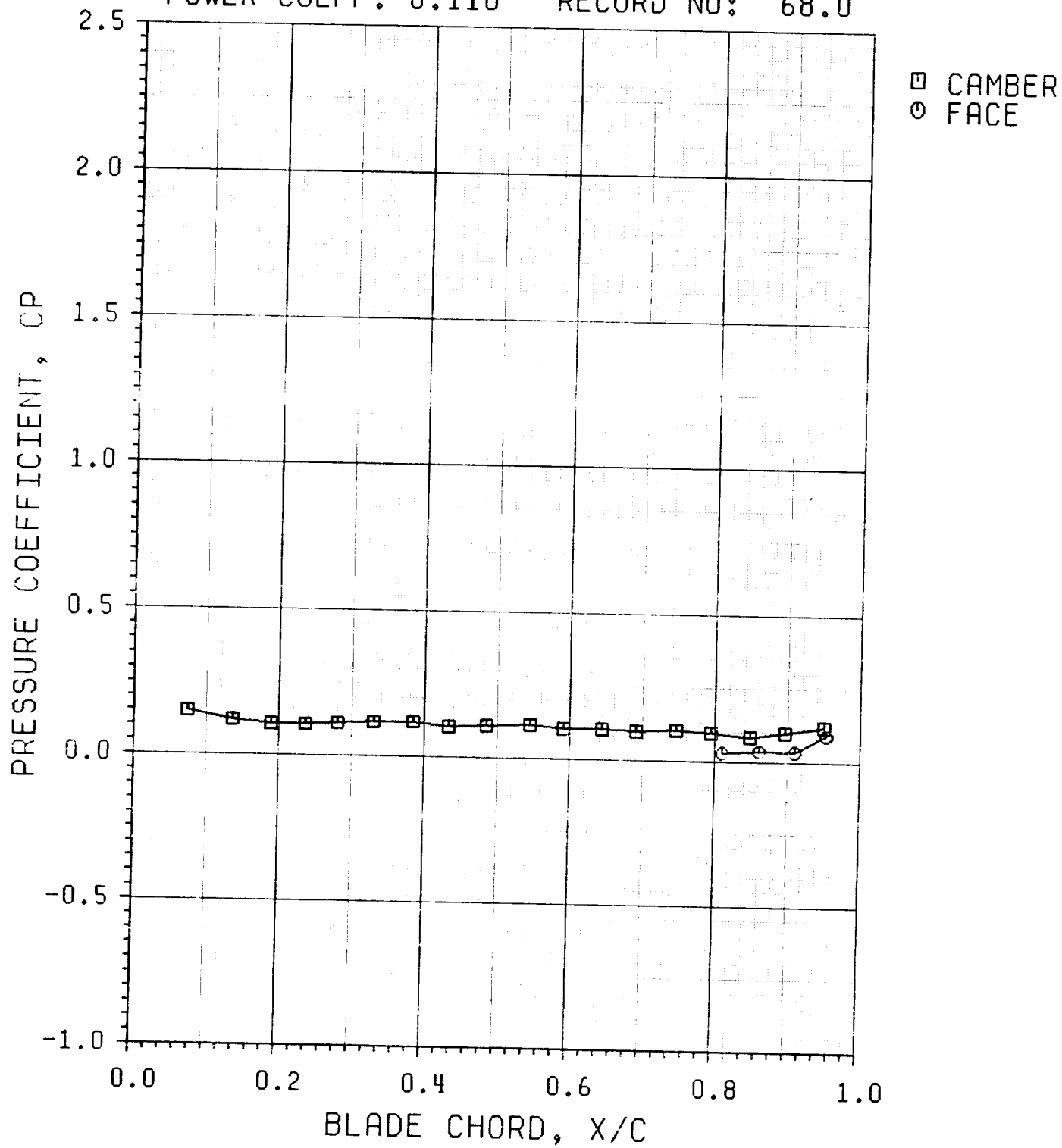
TUNNEL STATIC PRESSURE, PO: 76370.0 PA, 11.076 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	72853.1	10.566	26890.0	3.900	-0.131
0.113	72917.5	10.575	26897.2	3.901	-0.128
0.160	73200.6	10.616	26900.5	3.901	-0.118
0.206	72969.6	10.583	26900.1	3.901	-0.126
0.262	73720.3	10.692	26901.6	3.902	-0.098
0.308	73404.6	10.646	26898.6	3.901	-0.110
0.361	73486.9	10.658	26907.1	3.902	-0.107
0.412	73286.2	10.629	26904.0	3.902	-0.115
0.460	73135.9	10.607	26901.7	3.902	-0.120
0.510	73333.4	10.636	26910.2	3.903	-0.113
0.561	73184.3	10.614	26917.9	3.904	-0.118
0.610	73036.4	10.593	26926.8	3.905	-0.124
0.657	73157.7	10.610	26924.6	3.905	-0.119
0.707	73400.0	10.645	26928.1	3.905	-0.110
0.760	73426.6	10.649	26930.0	3.906	-0.109
0.811	73570.6	10.670	26934.3	3.906	-0.104
0.862	73829.7	10.708	26938.1	3.907	-0.094
0.913	73830.1	10.708	26947.1	3.908	-0.094
0.960	73611.7	10.676	26951.3	3.909	-0.102
FACE					
0.065	74665.9	10.829	26883.7	3.899	-0.063
0.132	74571.4	10.815	26888.1	3.900	-0.067
0.202	75029.7	10.882	26885.4	3.899	-0.050
0.270	75164.0	10.901	26888.0	3.900	-0.045
0.335	75395.1	10.935	26888.7	3.900	-0.036
0.401	75692.8	10.978	26890.1	3.900	-0.025
0.468	75991.7	11.021	26892.7	3.900	-0.014
0.537	75943.1	11.014	26893.4	3.900	-0.016
0.594	75861.7	11.002	26902.7	3.902	-0.019
0.654	75831.1	10.998	26905.0	3.902	-0.020
0.707	75881.7	11.005	26914.6	3.903	-0.018
0.760	75678.3	10.976	26917.0	3.904	-0.026
0.802	75900.4	11.008	26916.8	3.904	-0.017
0.862	75746.1	10.986	26927.2	3.905	-0.017
0.912	75647.7	10.971	26927.7	3.905	-0.023
0.958	74091.2	10.746	26936.1	3.907	-0.027

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13    MACH NO: 0.50    ADV. RATIO: 3.061

POWER COEFF: 0.110    RECORD NO: 68.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 68.0

## WIND TUNNEL:

---

STATIC TEMPERATURE:	285.0 K	53.3 F
STATIC PRESSURE:	76040.0 PA	11.028 PSI
AIR DENSITY:	0.9294 KG/M3	0.05302 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	169.22 M/S	555.21 FT/S

## PROPFAN:

---

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1210.0	
ADVANCE RATIO:	3.061	
POWER COEFFICIENT:	0.110	
BLADE ANGLE (@ X=41" STA):	52.0 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3707 M	53.96 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	0.715	

RUN DATE:	03-09-1987
RUN TIME:	17:57:35

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 68.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, P0: 76040.0 PA, 11.028 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	72037.4	10.448	27198.7	3.945	-0.147
0.136	72852.1	10.566	27202.4	3.945	-0.117
0.189	73172.7	10.612	27191.4	3.944	-0.105
0.236	73200.7	10.616	27194.8	3.944	-0.104
0.280	73079.2	10.599	27197.5	3.945	-0.109
0.330	72941.2	10.579	27191.7	3.944	-0.114
0.384	72878.4	10.570	27195.3	3.944	-0.116
0.433	73252.6	10.624	27197.1	3.944	-0.102
0.485	73107.6	10.603	27192.6	3.944	-0.108
0.545	72969.4	10.583	27195.2	3.944	-0.113
0.591	73245.1	10.623	27197.9	3.945	-0.103
0.644	73226.7	10.620	27196.0	3.944	-0.103
0.691	73392.2	10.644	27195.9	3.944	-0.097
0.746	73277.9	10.628	27197.5	3.945	-0.102
0.794	73449.4	10.653	27203.8	3.945	-0.095
0.848	73814.3	10.705	27204.4	3.946	-0.082
0.896	73385.9	10.643	27206.5	3.946	-0.098
0.950	72826.4	10.562	27210.2	3.946	-0.118
FACE					
0.074	*****	*****	27186.0	3.943	*****
0.150	*****	*****	27183.8	3.943	*****
0.229	*****	*****	27189.3	3.943	*****
0.302	*****	*****	27181.8	3.942	*****
0.374	*****	*****	27184.1	3.943	*****
0.450	*****	*****	27184.5	3.943	*****
0.519	*****	*****	27180.8	3.942	*****
0.569	*****	*****	27182.5	3.942	*****
0.619	*****	*****	27185.5	3.943	*****
0.669	*****	*****	27189.2	3.943	*****
0.716	*****	*****	27191.1	3.944	*****
0.762	*****	*****	27191.7	3.944	*****
0.810	75298.2	10.921	27189.9	3.943	-0.027
0.861	75105.0	10.893	27187.1	3.943	-0.034
0.910	75159.2	10.901	27200.0	3.945	-0.032
0.953	73624.0	10.678	27196.0	3.944	-0.089

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B8

(B8.1 through B8.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.500 \pm 0.001$

Advance Ratio,  $J = 3.067 \pm 0.009$

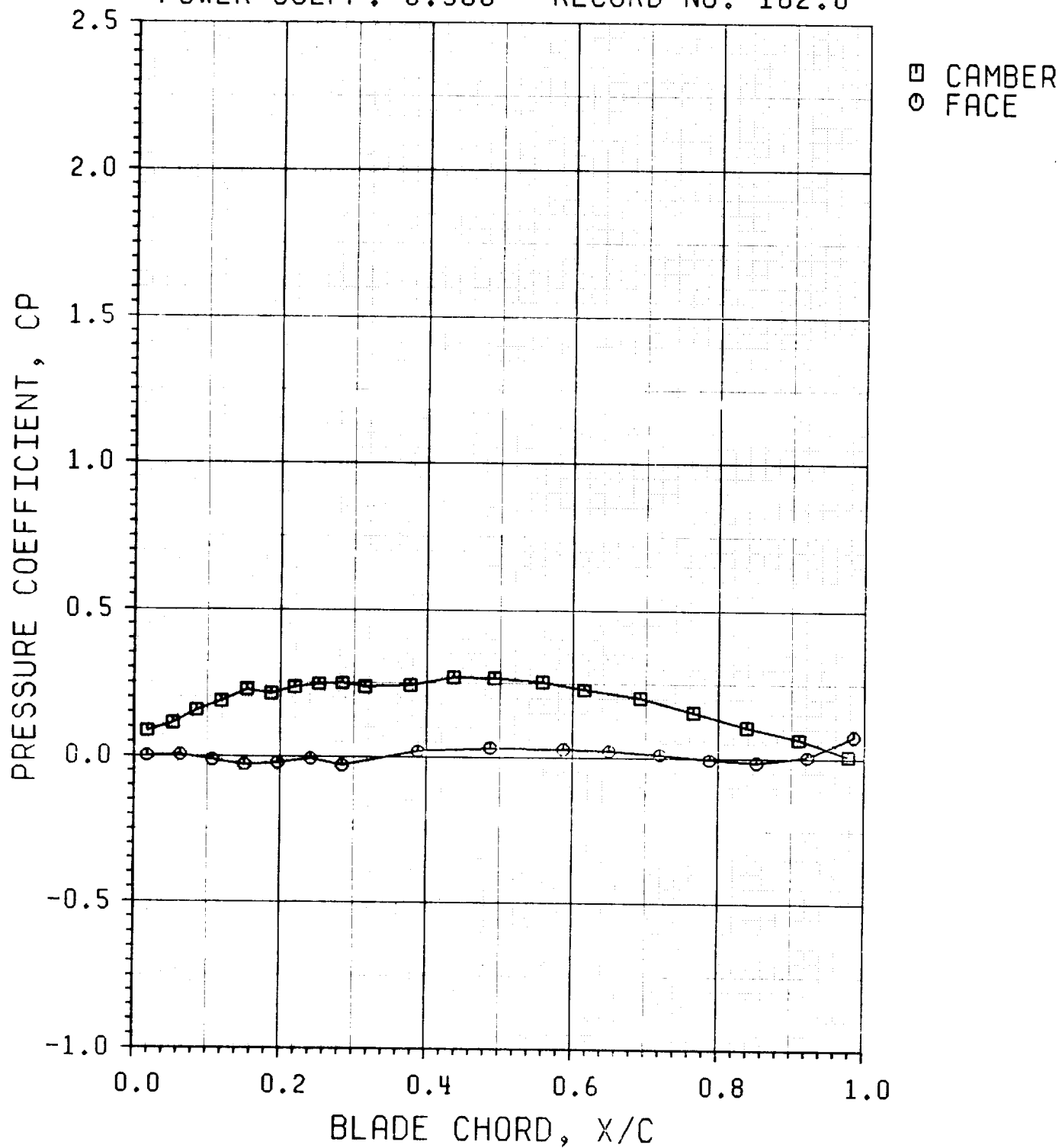
Power Coefficient,  $CP = 0.361 \pm 0.005$

Blade Angle,  $\beta = 55.1 \pm 0.8^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.50 ADV. RATIO: 3.074

POWER COEFF: 0.360 RECORD NO: 162.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 162.0

WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	76450.0 PA	11.088 PSI
AIR DENSITY:	0.9579 KG/M3	0.05980 LBF/FT3
SPEED OF SOUND:	834.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.18 M/S	548.35 FT/S

PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1191.0	
ADVANCE RATIO:	3.074	
POWER COEFFICIENT:	0.360	
BLADE ANGLE (@ X=41" STA):	54.3 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3694 M	53.91 IN.
RADIUS RATIO (@ MID CHORD):	0.311	
REL MACH NO. (@ MID CHORD):	0.525	

RUN DATE:	03-12-1987
RUN TIME:	17:10:27

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 162.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, P0: 76450.0 PA, 11.088 PSI

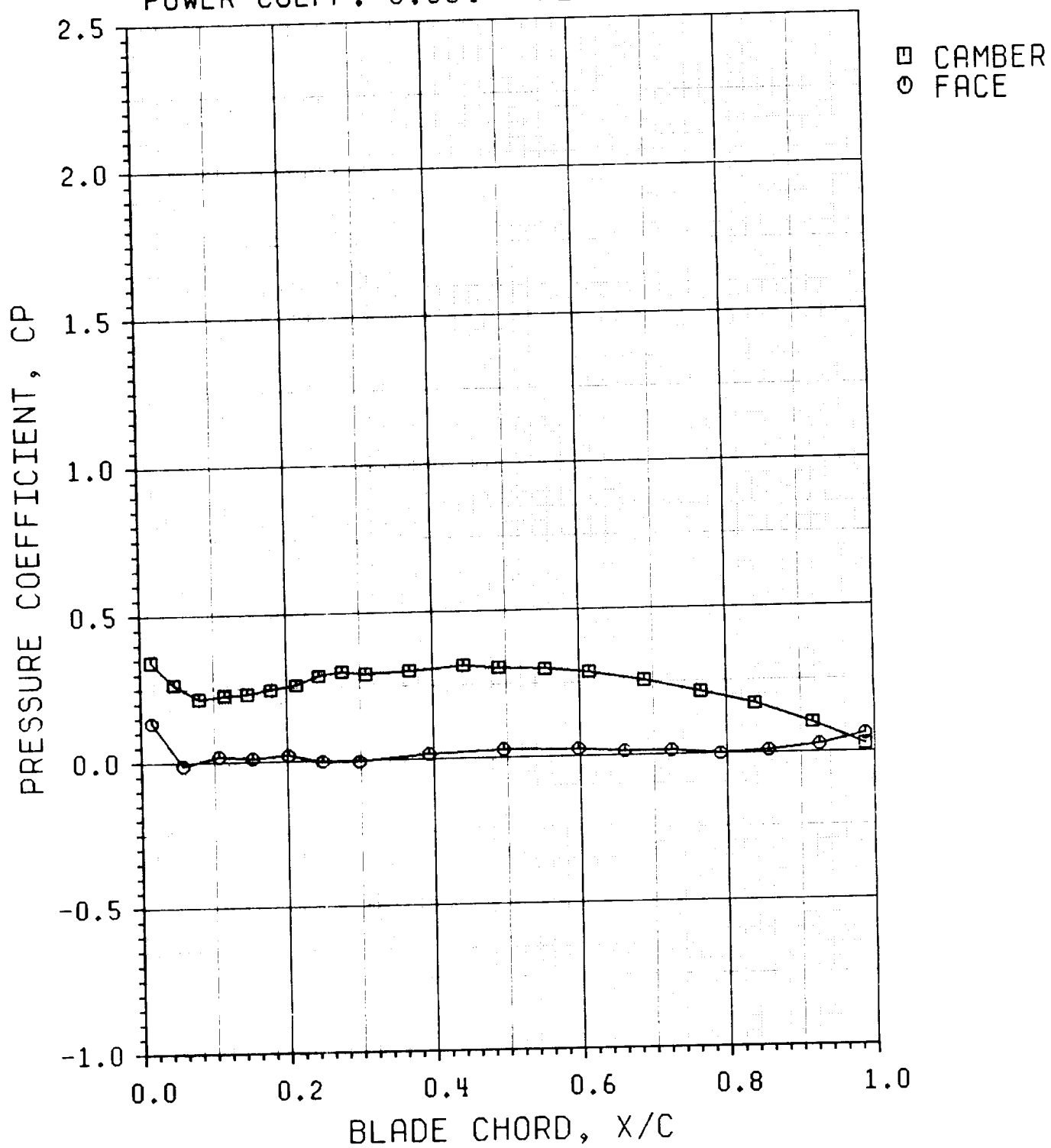
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	76210.4	10.908	14417.6	2.091	-0.086
0.058	74824.9	10.852	14480.8	2.098	-0.118
0.085	74200.7	10.762	14448.0	2.095	-0.156
0.119	73747.1	10.696	14458.5	2.097	-0.187
0.154	73174.7	10.618	14474.2	2.099	-0.226
0.187	73373.6	10.642	14491.9	2.102	-0.212
0.219	78088.4	10.592	14509.4	2.104	-0.285
0.252	72881.7	10.570	14526.4	2.107	-0.246
0.284	72828.5	10.563	14544.0	2.109	-0.249
0.315	78001.6	10.588	14564.0	2.112	-0.287
0.377	72911.9	10.575	14602.1	2.118	-0.242
0.436	72502.7	10.515	14648.4	2.124	-0.270
0.492	72519.7	10.518	14668.7	2.127	-0.268
0.558	72695.5	10.543	14728.8	2.136	-0.255
0.615	78067.5	10.597	14772.4	2.142	-0.229
0.692	73457.6	10.654	14827.6	2.150	-0.202
0.765	74144.6	10.753	14891.2	2.160	-0.155
0.838	74882.2	10.860	14947.8	2.168	-0.105
0.910	75492.9	10.949	15010.8	2.177	-0.064
0.978	76332.6	11.071	15068.2	2.185	-0.008
FACE					
0.018	76433.7	11.085	14424.8	2.092	-0.001
0.063	76371.2	11.076	14460.2	2.097	-0.005
0.107	76684.4	11.114	14485.6	2.101	0.018
0.151	76874.3	11.149	14508.4	2.104	0.029
0.196	76773.2	11.135	14533.3	2.108	0.022
0.241	76559.1	11.104	14557.1	2.111	0.007
0.284	76881.7	11.150	14578.4	2.114	0.030
0.388	76176.4	11.048	14636.8	2.123	-0.019
0.487	75992.2	11.021	14698.4	2.132	-0.081
0.587	76049.5	11.030	14763.1	2.141	-0.027
0.650	76123.6	11.040	14802.3	2.147	-0.022
0.720	76284.4	11.064	14850.8	2.154	-0.011
0.788	76533.6	11.100	14903.1	2.161	0.006
0.852	76668.3	11.119	14953.3	2.169	0.015
0.922	76387.9	11.079	15010.7	2.177	-0.004
0.985	75323.1	10.924	15066.8	2.185	-0.075

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.50    ADV. RATIO: 3.071

POWER COEFF: 0.364    RECORD NO: 215.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 215.0

WIND TUNNEL:

STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	76040.0 PA	11.028 PSI
AIR DENSITY:	0.9632 KG/M3	0.06018 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.23 M/S	545.39 FT/S

PROPFAN:

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1186.0	
ADVANCE RATIO:	8.071	
POWER COEFFICIENT:	0.864	
BLADE ANGLE (@ X=41" STA):	54.6 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3692 M	53.91 IN.
RADIUS RATIO (@ MID CHORD):	0.446	
REL MACH NO. (@ MID CHORD):	0.550	

RUN DATE:	03-13-1987
RUN TIME:	23:30:08

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 215.0

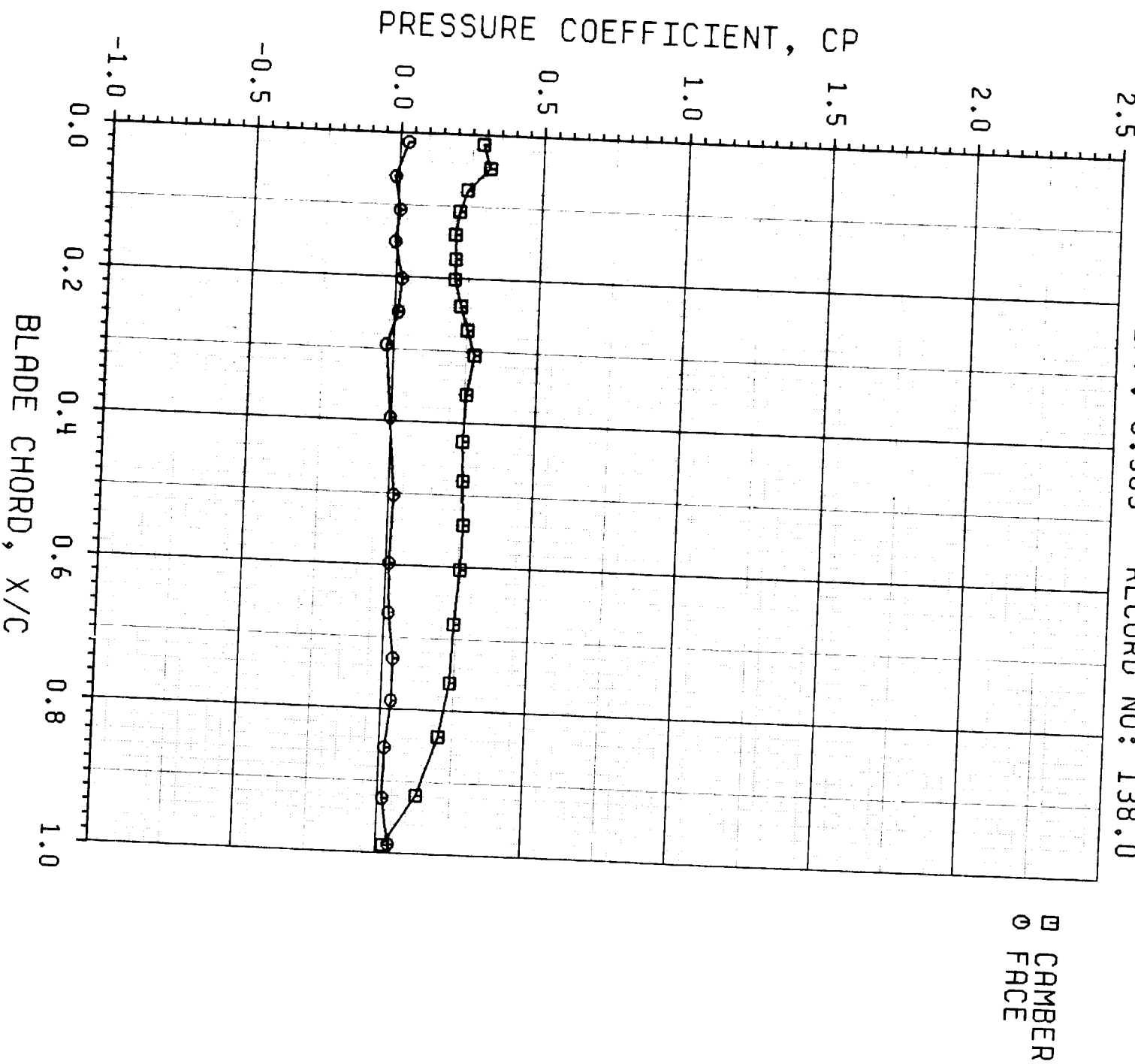
RADIAL STATION: 2

TUNNEL STATIC PRESSURE, PO: 76040.0 PA, 11.028 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	70631.6	10.244	15778.6	2.288	-0.343
0.046	71841.6	10.419	15785.2	2.289	-0.266
0.080	72638.6	10.535	15791.9	2.290	-0.215
0.115	72465.0	10.510	15804.0	2.292	-0.226
0.146	72409.5	10.502	15813.1	2.293	-0.230
0.178	72187.9	10.470	15804.8	2.292	-0.244
0.213	71932.0	10.432	15835.6	2.297	-0.259
0.244	71460.6	10.364	15849.8	2.299	-0.289
0.276	71272.9	10.337	15862.4	2.301	-0.301
0.303	71409.7	10.357	15879.2	2.303	-0.292
0.368	71246.9	10.333	15910.8	2.308	-0.301
0.442	71002.0	10.298	15946.6	2.313	-0.316
0.490	71151.2	10.819	15984.0	2.318	-0.306
0.553	71247.1	10.833	16025.4	2.324	-0.299
0.613	71438.2	10.361	16069.1	2.331	-0.286
0.688	71934.8	10.433	16124.9	2.339	-0.255
0.765	72600.1	10.529	16185.3	2.347	-0.213
0.838	73298.8	10.631	16249.1	2.357	-0.169
0.916	74394.1	10.790	16321.0	2.367	-0.101
0.987	75634.2	10.969	16385.0	2.376	-0.025
FACE					
0.015	73921.3	10.721	15792.2	2.290	-0.134
0.067	76249.9	11.059	15805.5	2.292	0.013
0.106	76753.5	10.987	15822.1	2.295	-0.018
0.152	75886.2	11.006	15840.8	2.297	-0.010
0.201	75737.5	10.984	15856.1	2.300	-0.019
0.248	76099.9	11.037	15876.3	2.303	0.004
0.298	76185.1	11.042	15897.2	2.306	0.006
0.393	75804.1	10.994	15944.4	2.312	-0.015
0.495	75639.9	10.970	16002.0	2.321	-0.025
0.597	75691.8	10.978	16068.4	2.330	-0.022
0.660	75841.4	10.999	16110.9	2.337	-0.012
0.724	75852.9	11.001	16158.2	2.343	-0.012
0.791	76054.7	11.030	16209.7	2.351	0.001
0.856	75903.1	11.008	16266.1	2.359	-0.008
0.925	75627.3	10.968	16327.5	2.368	-0.025
0.987	75055.7	10.886	16388.1	2.377	-0.060

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.50    ADV. RATIO: 3.075  
POWER COEFF: 0.363    RECORD NO: 138.0



# LAP/SR7 BLADE -- STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 138.0

## WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	76580.0 PA	11.107 PSI
AIR DENSITY:	0.9665 KG/M3	0.06034 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.53 M/S	546.38 FT/S

## PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1187.0	
ADVANCE RATIO:	8.075	
POWER COEFFICIENT:	0.863	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3685 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.569	
REL MACH NO. (@ MID CHORD):	0.578	

RUN DATE:	03-11-1987
RUN TIME:	21:24:11

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 138.0

RADIAL STATION: 8

TUNNEL STATIC PRESSURE, P0: 76580.0 PA, 11.107 PSI

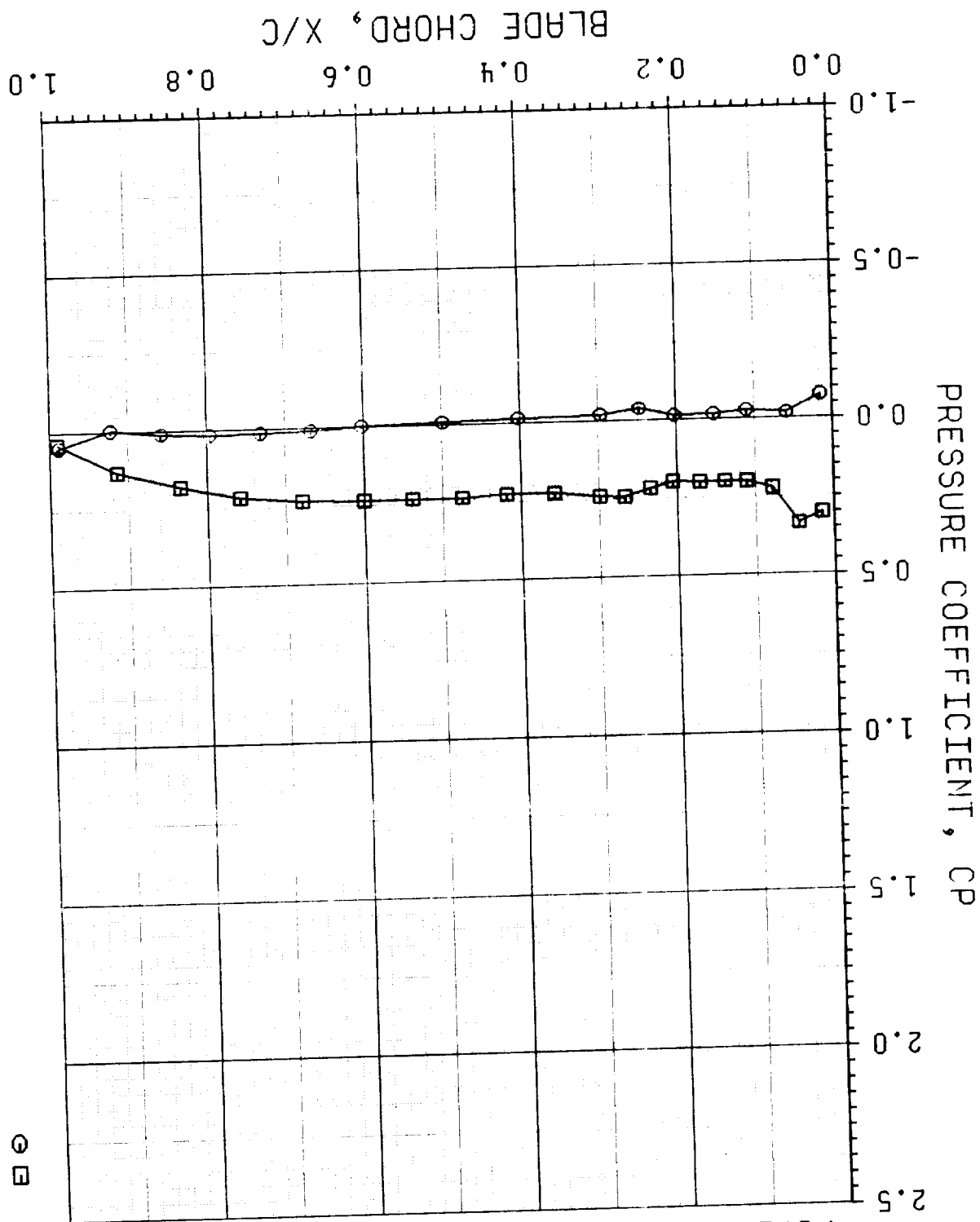
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	71497.2	10.369	17675.2	2.563	-0.288
0.046	71062.6	10.306	17678.3	2.564	-0.812
0.077	72373.3	10.496	17676.4	2.564	-0.238
0.107	72815.6	10.561	17681.6	2.564	-0.213
0.139	73036.3	10.598	17683.6	2.565	-0.200
0.173	72965.6	10.582	17685.9	2.565	-0.204
0.201	72973.2	10.588	17693.8	2.566	-0.204
0.238	72542.7	10.521	17701.4	2.567	-0.228
0.271	72115.0	10.459	17711.9	2.569	-0.252
0.305	71616.6	10.387	17724.8	2.571	-0.280
0.360	72028.4	10.446	17748.9	2.573	-0.257
0.425	72186.7	10.462	17773.6	2.578	-0.250
0.480	72026.9	10.446	17796.7	2.581	-0.256
0.541	71904.9	10.429	17837.8	2.587	-0.262
0.603	71988.1	10.441	17871.8	2.592	-0.257
0.679	72240.1	10.477	17929.8	2.600	-0.242
0.761	72333.6	10.491	17990.2	2.609	-0.236
0.836	72914.9	10.575	18054.8	2.619	-0.203
0.919	74173.2	10.758	18128.5	2.629	-0.138
0.989	76176.5	11.048	18196.0	2.639	-0.022
FACE					
0.013	76079.2	11.034	17686.0	2.565	-0.028
0.061	76836.4	11.144	17692.1	2.566	0.014
0.107	76497.6	11.095	17696.0	2.566	-0.005
0.151	76700.4	11.124	17701.9	2.567	0.007
0.202	76228.9	11.056	17711.9	2.569	-0.020
0.248	76384.1	11.078	17721.2	2.570	-0.011
0.294	77038.6	11.178	17733.7	2.572	0.026
0.395	76657.4	11.118	17768.3	2.577	0.004
0.502	76279.4	11.063	17821.1	2.585	-0.017
0.597	76400.4	11.081	17869.3	2.592	-0.010
0.666	76320.3	11.069	17920.9	2.599	-0.014
0.729	75946.4	11.015	17956.9	2.604	-0.035
0.788	75970.4	11.018	18003.3	2.611	-0.034
0.853	76254.9	11.059	18061.0	2.619	-0.018
0.924	76287.7	11.064	18128.5	2.628	-0.016
0.988	75833.3	10.998	18190.4	2.638	-0.041

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4 MACH NO: 0.50 ADV. RATIO: 3.062

POWER COEFF: 0.361 RECORD NO: 202.0

□ CAMBER  
○ FACE



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 202.0

WIND TUNNEL:

STATIC TEMPERATURE:	277.0 K	88.9 F
STATIC PRESSURE:	76100.0 PA	11.037 PSI
AIR DENSITY:	0.9570 KG/M3	0.05975 LBF/FT3
SPEED OF SOUND:	333.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.36 FT/S

PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1194.0	
ADVANCE RATIO:	3.062	
POWER COEFFICIENT:	0.361	
BLADE ANGLE (@ X=41" STA):	54.7 DEG.	
BLADE CHORD:	0.5676 M	22.35 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3692 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.668	
REL MACH NO. (@ MID CHORD):	0.606	

RUN DATE:	03-13-1987
RUN TIME:	18:32:30



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 202.0

RADIAL STATION: 4

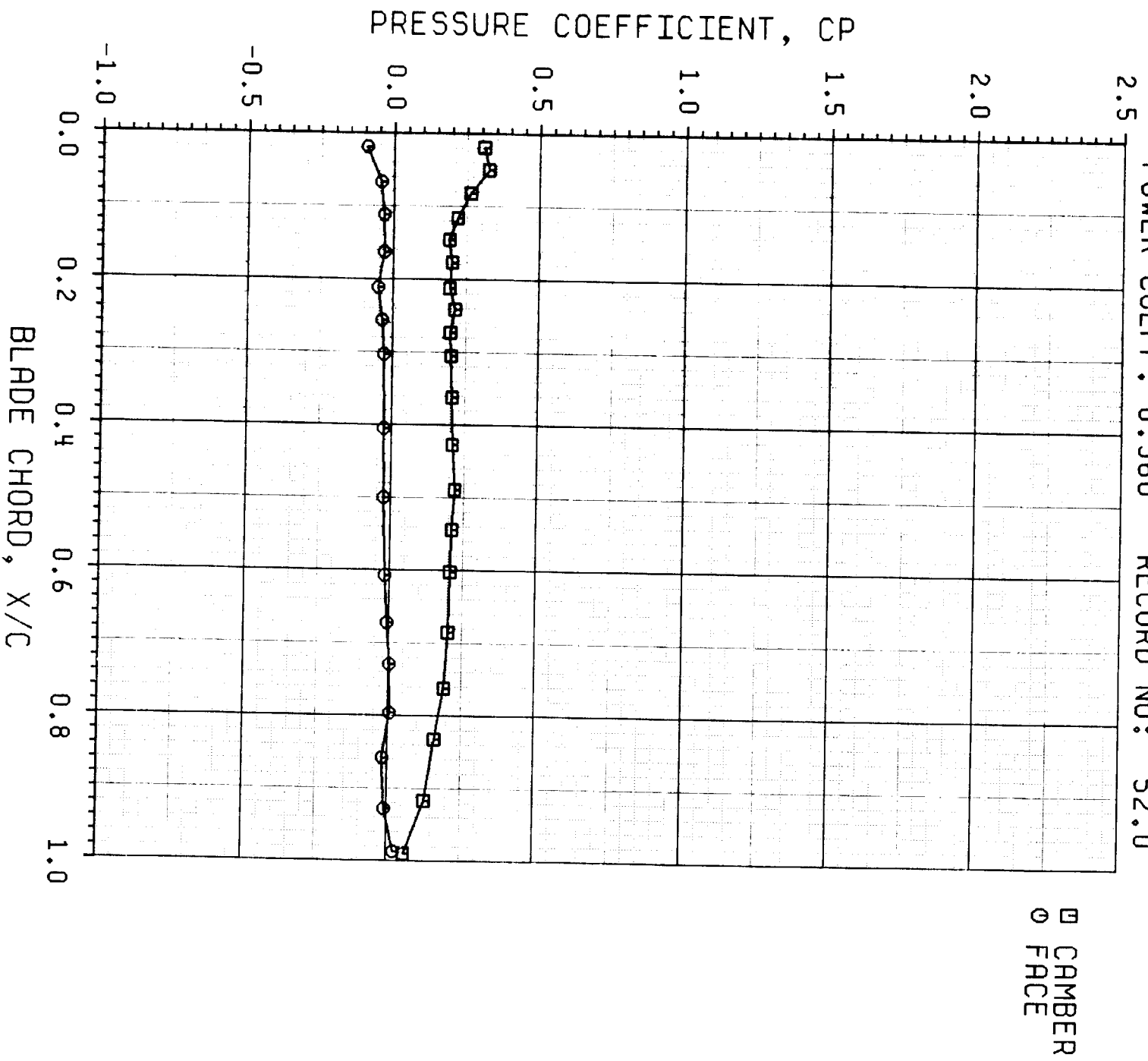
TUNNEL STATIC PRESSURE, PO: 76100.0 PA, 11.037 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	70263.1	10.190	19356.8	2.807	-0.302
0.045	69587.8	10.098	19353.0	2.807	-0.836
0.078	71797.2	10.413	19345.2	2.806	-0.222
0.111	72225.4	10.475	19340.2	2.805	-0.200
0.139	72261.0	10.480	19338.4	2.805	-0.199
0.171	72235.9	10.477	19335.6	2.804	-0.200
0.205	72289.1	10.484	19336.5	2.804	-0.197
0.234	71893.2	10.427	19336.2	2.804	-0.218
0.267	71414.6	10.357	19348.0	2.805	-0.242
0.299	71461.7	10.364	19845.5	2.806	-0.240
0.357	71728.4	10.403	19359.3	2.808	-0.226
0.418	71716.2	10.401	19378.1	2.810	-0.226
0.475	71557.6	10.378	19399.9	2.814	-0.234
0.538	71549.2	10.377	19430.8	2.818	-0.234
0.600	71533.5	10.375	19461.7	2.823	-0.235
0.679	71576.3	10.381	19515.2	2.830	-0.232
0.758	71826.0	10.417	19573.8	2.839	-0.218
0.834	72556.6	10.523	19641.2	2.849	-0.180
0.914	73539.6	10.666	19720.3	2.860	-0.130
0.990	75355.9	10.929	19797.4	2.871	-0.038
FACE					
0.015	77579.9	11.252	19373.1	2.810	0.076
0.059	76463.6	11.090	19369.3	2.809	0.019
0.110	76649.9	11.117	19361.6	2.808	0.028
0.152	76438.0	11.086	19358.6	2.808	0.017
0.202	76381.1	11.078	19361.5	2.808	0.015
0.247	76852.4	11.146	19362.4	2.808	0.039
0.297	76507.7	11.096	19368.6	2.809	0.021
0.402	76411.2	11.082	19391.4	2.812	0.016
0.499	76274.9	11.062	19434.3	2.819	0.009
0.602	76131.8	11.042	19485.4	2.826	0.002
0.667	75972.5	11.018	19513.1	2.830	-0.007
0.731	75873.7	11.004	19564.1	2.837	-0.012
0.796	75814.1	10.996	19616.9	2.845	-0.015
0.858	75916.2	11.010	19666.7	2.852	-0.009
0.922	76194.2	11.051	19727.5	2.861	0.005
0.988	75152.2	10.900	19796.4	2.871	-0.048

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.50 ADV. RATIO: 3.058

POWER COEFF: 0.360 RECORD NO: 52.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 52.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	76590.0 PA	11.108 PSI
AIR DENSITY:	0.9702 KG/M3	0.06057 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.23 M/S	545.39 FT/S

## PROPFAN:

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RADIAL STATION:	5	
ROTOR SPEED (RPM):	1191.0	
ADVANCE RATIO:	3.058	
POWER COEFFICIENT:	0.360	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.739	
REL MACH NO. (@ MID CHORD):	0.628	

RUN DATE:	03-06-1987
RUN TIME:	17:50:50

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 52.0

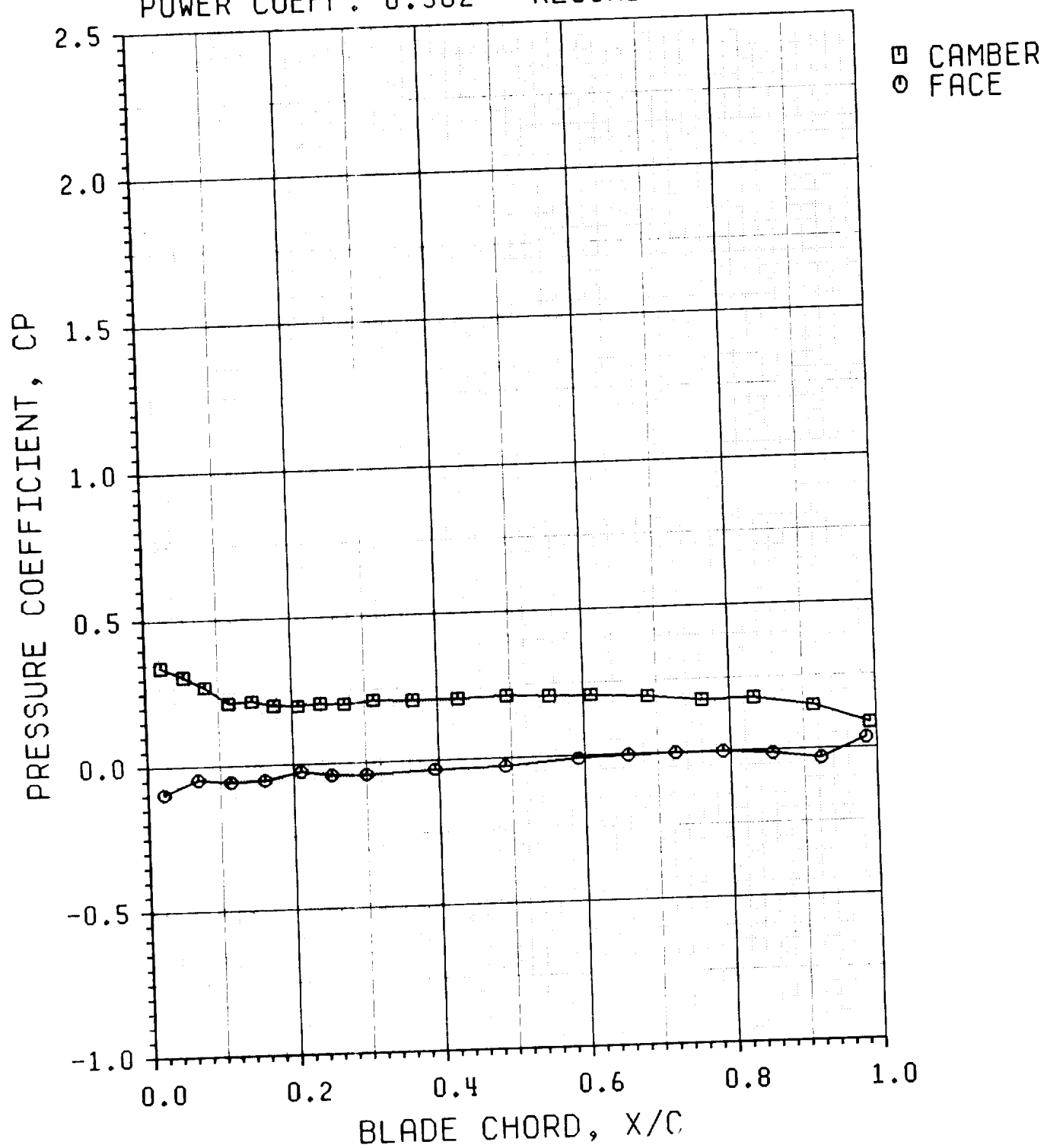
RADIAL STATION: 5

TUNNEL STATIC PRESSURE, PO: 76590.0 PA, 11.108 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	70165.1	10.176	20960.7	3.040	-0.307
0.050	69797.8	10.128	20950.2	3.038	-0.324
0.082	71088.2	10.310	20988.6	3.037	-0.263
0.116	72008.9	10.444	20930.7	3.036	-0.219
0.146	72595.7	10.529	20923.8	3.035	-0.191
0.177	72378.5	10.497	20919.3	3.034	-0.201
0.212	72535.4	10.520	20916.3	3.034	-0.194
0.241	72131.2	10.461	20915.2	3.038	-0.218
0.273	72478.1	10.511	20914.8	3.033	-0.197
0.305	72382.6	10.498	20915.6	3.033	-0.201
0.362	72283.8	10.484	20923.7	3.035	-0.206
0.427	72221.4	10.474	20938.2	3.037	-0.209
0.489	71998.5	10.442	20952.0	3.039	-0.219
0.544	72155.2	10.465	20973.0	3.042	-0.211
0.602	72222.5	10.475	21003.9	3.046	-0.208
0.685	72332.1	10.491	21047.4	3.053	-0.202
0.762	72561.1	10.524	21096.2	3.060	-0.191
0.832	73204.9	10.617	21147.6	3.067	-0.160
0.917	78892.0	10.717	21219.4	3.078	-0.127
0.990	76389.3	10.927	21285.7	3.087	-0.059
FACE					
0.019	78571.1	11.395	20972.6	3.042	0.094
0.067	77541.6	11.246	20955.6	3.039	0.045
0.112	77312.1	11.213	20939.2	3.037	0.034
0.163	77282.4	11.208	20932.5	3.036	0.033
0.211	77691.4	11.268	20930.8	3.036	0.053
0.256	77363.4	11.220	20929.9	3.036	0.037
0.303	77226.2	11.200	20929.6	3.035	0.030
0.405	77150.0	11.189	20937.0	3.037	0.027
0.500	77103.9	11.183	20959.2	3.040	0.025
0.607	76977.9	11.164	21008.0	3.047	0.018
0.672	76740.4	11.130	21037.0	3.051	0.007
0.729	76526.7	11.099	21074.7	3.057	-0.003
0.796	76485.1	11.093	21116.9	3.063	-0.005
0.853	76993.7	11.167	21160.3	3.069	0.019
0.928	76794.5	11.138	21220.3	3.078	0.010
0.987	76118.0	11.040	21277.2	3.086	-0.022

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6    MACH NO: 0.50    ADV. RATIO: 3.060  
POWER COEFF: 0.362    RECORD NO: 189.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 189.0

WIND TUNNEL:

STATIC TEMPERATURE:	280.0 K	44.8 F
STATIC PRESSURE:	76150.0 PA	11.044 PSI
AIR DENSITY:	0.9474 KG/M3	0.05914 LBF/FT3
SPEED OF SOUND:	335.46 M/S	1100.64 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.73 M/S	550.82 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1201.0	
ADVANCE RATIO:	8.060	
POWER COEFFICIENT:	0.362	
BLADE ANGLE (@ X=41" STA):	55.0 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.649	

RUN DATE:	03-18-1987
RUN TIME:	14:28:52

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 189.0

RADIAL STATION: 6

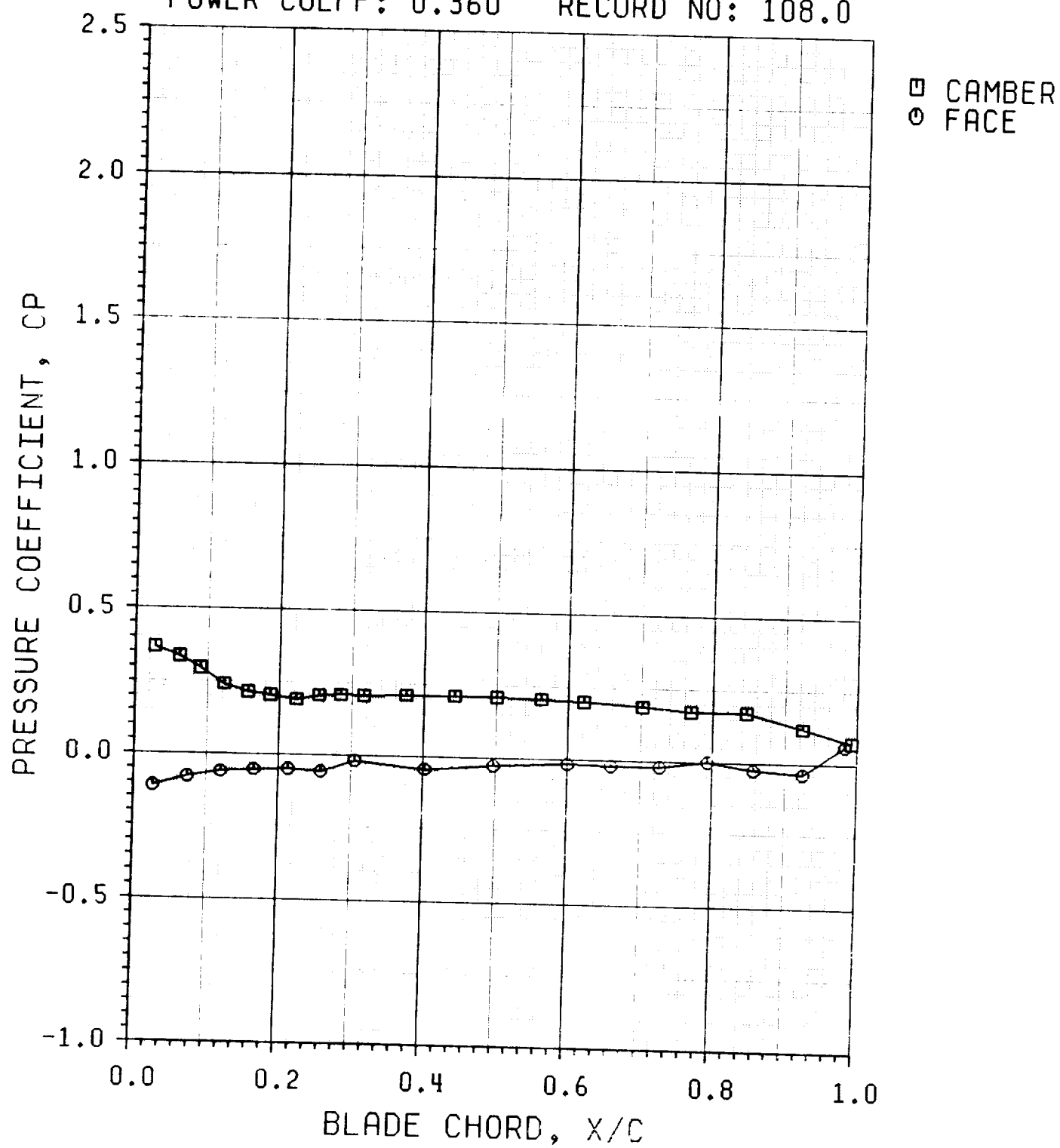
TUNNEL STATIC PRESSURE, PO: 76150.0 PA, 11.044 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	68555.2	9.943	22819.2	3.287	-0.340
0.053	69300.6	10.051	22311.8	3.286	-0.307
0.082	70101.9	10.167	22305.2	3.235	-0.271
0.114	71366.7	10.351	22305.5	3.235	-0.214
0.146	71270.6	10.837	22802.2	3.235	-0.219
0.176	71632.6	10.389	22291.3	3.233	-0.203
0.208	71709.1	10.400	22290.1	3.233	-0.199
0.239	71579.8	10.381	22292.8	3.233	-0.205
0.272	71671.7	10.395	22291.6	3.233	-0.201
0.312	71435.0	10.360	22295.5	3.234	-0.211
0.366	71503.7	10.370	22302.7	3.235	-0.208
0.428	71539.3	10.376	22315.8	3.237	-0.207
0.495	71894.9	10.355	22327.2	3.238	-0.213
0.553	71510.0	10.371	22342.4	3.240	-0.208
0.610	71544.1	10.376	22362.2	3.243	-0.206
0.688	71749.8	10.406	22398.7	3.249	-0.196
0.762	72184.2	10.469	22439.6	3.254	-0.177
0.833	72101.9	10.457	22484.0	3.261	-0.180
0.914	72789.4	10.557	22536.2	3.268	-0.149
0.991	74234.4	10.766	22589.8	3.276	-0.085
FACE					
0.022	78283.6	11.354	22325.1	3.238	0.096
0.069	77193.0	11.196	22313.3	3.236	0.047
0.114	77440.4	11.231	22304.8	3.235	0.058
0.161	77361.8	11.220	22295.6	3.234	0.054
0.210	76762.9	11.133	22294.5	3.233	0.027
0.252	77109.2	11.183	22291.7	3.233	0.043
0.300	77120.9	11.185	22288.0	3.232	0.044
0.394	76899.6	11.158	22299.3	3.234	0.034
0.491	76822.3	11.142	22315.0	3.236	0.030
0.591	76391.1	11.079	22349.1	3.241	0.011
0.659	76258.0	11.060	22371.4	3.245	0.005
0.724	76189.4	11.050	22403.6	3.249	0.002
0.789	76204.9	11.052	22434.6	3.254	0.002
0.857	76409.4	11.082	22483.6	3.261	0.012
0.923	76868.0	11.148	22529.6	3.268	0.032
0.985	75396.7	10.935	22576.1	3.274	-0.038

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.50 ADV. RATIO: 3.070

POWER COEFF: 0.360 RECORD NO: 108.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 108.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	76890.0 PA	11.079 PSI
AIR DENSITY:	0.9606 KG/M3	0.05997 LBF/FT3
SPEED OF SOUND:	338.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.36 FT/S

## PROPFAN:

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RADIAL STATION:	7	
ROTOR SPEED (RPM):	1191.0	
ADVANCE RATIO:	3.070	
POWER COEFFICIENT:	0.360	
BLADE ANGLE (@ X=41" STA):	55.0 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	0.667	

RUN DATE:	03-10-1987
RUN TIME:	20:19:12

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 108.0

RADIAL STATION: 7

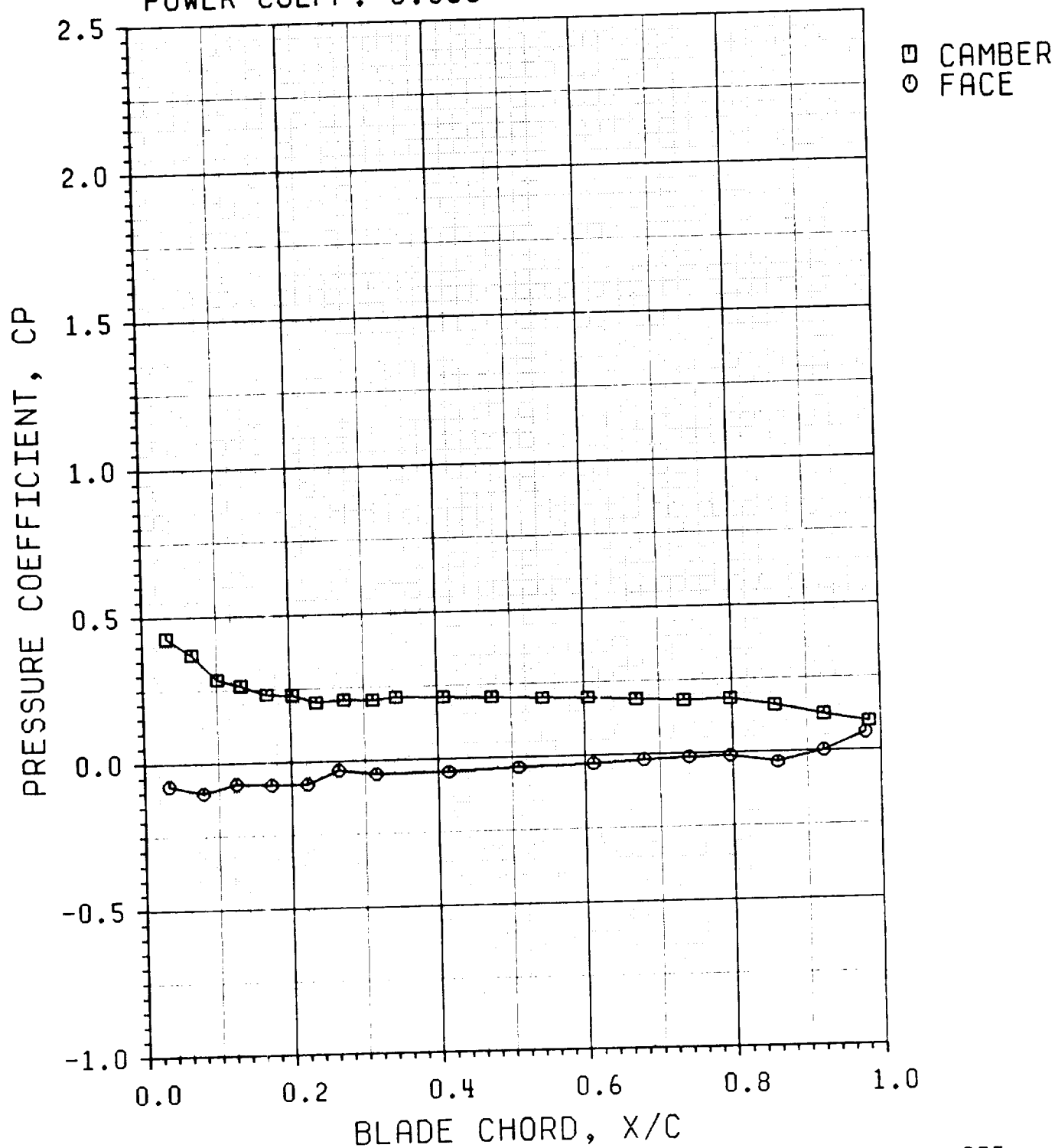
TUNNEL STATIC PRESSURE, P0: 76390.0 PA, 11.079 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	67731.2	9.823	23642.4	3.429	-0.366
0.061	68480.1	9.932	23641.9	3.429	-0.385
0.090	69426.8	10.069	23642.2	3.429	-0.295
0.123	70701.5	10.254	23638.8	3.428	-0.241
0.156	71297.4	10.340	23635.0	3.428	-0.215
0.187	71552.1	10.377	23629.1	3.427	-0.205
0.223	71864.6	10.423	23634.8	3.428	-0.191
0.254	71630.5	10.374	23639.7	3.429	-0.206
0.284	71458.5	10.364	23638.6	3.428	-0.209
0.316	71484.8	10.368	23641.5	3.429	-0.207
0.375	71409.9	10.357	23645.7	3.429	-0.211
0.442	71403.7	10.356	23656.0	3.431	-0.211
0.500	71420.1	10.358	23678.4	3.433	-0.210
0.562	71508.1	10.371	23691.6	3.436	-0.206
0.621	71648.9	10.391	23707.2	3.438	-0.200
0.702	71929.6	10.432	23745.3	3.444	-0.188
0.769	72301.3	10.486	23770.9	3.448	-0.172
0.846	72271.9	10.482	23806.6	3.453	-0.173
0.924	73555.1	10.668	23850.4	3.459	-0.119
0.992	74668.6	10.829	23889.2	3.465	-0.072
FACE					
0.027	79054.0	11.465	23638.7	3.428	0.113
0.074	78280.9	11.353	23638.6	3.428	0.080
0.120	77834.9	11.289	23626.6	3.427	0.061
0.166	77675.1	11.265	23632.3	3.427	0.054
0.213	77560.6	11.249	23620.5	3.426	0.050
0.258	77747.2	11.276	23625.8	3.427	0.057
0.305	76835.6	11.144	23628.8	3.427	0.019
0.402	77422.6	11.229	23640.1	3.429	0.044
0.497	77049.9	11.175	23661.5	3.432	0.028
0.600	76757.8	11.132	23684.8	3.435	0.016
0.660	76870.8	11.149	23703.1	3.438	0.020
0.727	76853.9	11.146	23733.2	3.442	0.020
0.793	76389.7	11.079	23766.7	3.447	0.000
0.857	77018.1	11.170	23802.3	3.452	0.026
0.925	77262.6	11.206	23840.8	3.458	0.037
0.983	74952.5	10.871	23880.1	3.463	-0.060

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.50    ADV. RATIO: 3.069

POWER COEFF: 0.360    RECORD NO: 175.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 175.0

## WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	76570.0 PA	11.105 PSI
AIR DENSITY:	0.9664 KG/M3	0.06033 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.53 M/S	546.88 FT/S

## PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1189.0	
ADVANCE RATIO:	3.069	
POWER COEFFICIENT:	0.360	
BLADE ANGLE (@ X=41" STA):	54.6 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3692 M	53.91 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	0.682	

RUN DATE:	08-12-1987
RUN TIME:	20:54:41

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 175.0

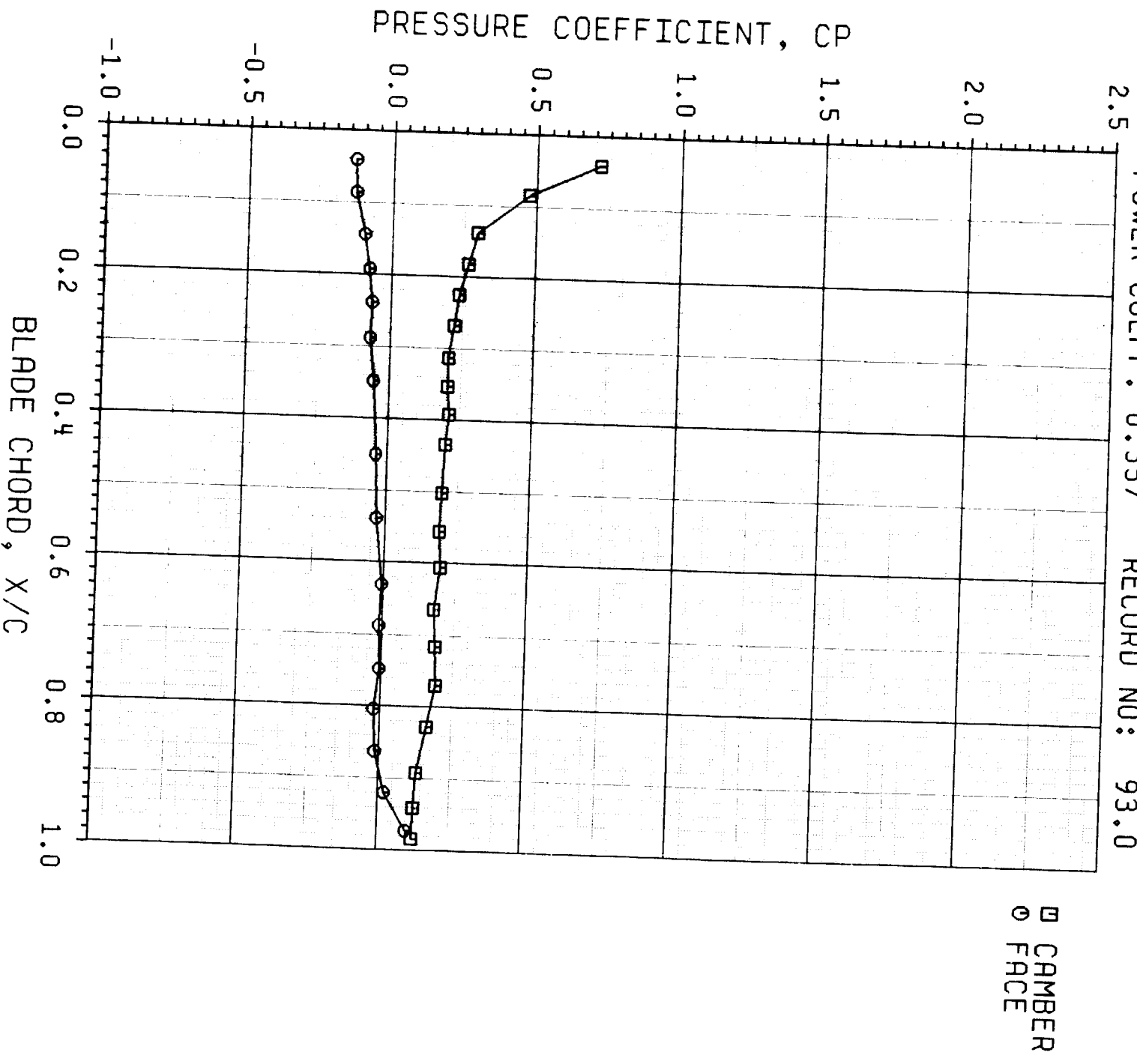
RADIAL STATION: 8

TUNNEL STATIC PRESSURE, P0: 76570.0 PA, 11.105 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	65987.5	9.570	24812.1	3.599	-0.427
0.067	67354.8	9.769	24810.6	3.598	-0.371
0.101	69465.6	10.075	24808.5	3.598	-0.286
0.133	70041.7	10.158	24808.8	3.598	-0.263
0.168	70848.4	10.275	24815.2	3.599	-0.281
0.203	70901.1	10.283	24811.6	3.598	-0.228
0.235	71611.5	10.386	24809.7	3.598	-0.200
0.278	71442.7	10.362	24817.5	3.599	-0.207
0.312	71480.0	10.367	24823.1	3.600	-0.205
0.344	71282.2	10.338	24825.6	3.601	-0.213
0.408	71363.7	10.850	24885.7	3.602	-0.210
0.474	71460.6	10.864	24845.2	3.603	-0.206
0.543	71623.0	10.888	24856.1	3.605	-0.199
0.605	71690.7	10.897	24877.2	3.608	-0.196
0.670	71907.1	10.429	24894.8	3.610	-0.187
0.734	72083.9	10.455	24912.0	3.613	-0.180
0.797	72022.7	10.446	24940.6	3.617	-0.182
0.857	72628.8	10.534	24954.2	3.619	-0.158
0.923	73529.7	10.664	24990.7	3.624	-0.122
0.984	74157.3	10.755	25009.1	3.627	-0.096
FACE					
0.033	78511.9	11.387	24808.6	3.597	0.078
0.079	79125.1	11.476	24800.8	3.597	0.103
0.124	78352.4	11.864	24804.2	3.597	0.072
0.172	78507.1	11.886	24798.9	3.597	0.078
0.221	78486.4	11.383	24794.5	3.596	0.077
0.264	77395.2	11.225	24799.4	3.597	0.038
0.315	77751.4	11.276	24803.4	3.597	0.048
0.414	77717.1	11.272	24816.9	3.599	0.046
0.509	77469.2	11.236	24833.0	3.602	0.036
0.611	77279.6	11.208	24859.3	3.605	0.029
0.679	77071.9	11.178	24875.7	3.608	0.020
0.740	76906.8	11.154	24894.2	3.610	0.014
0.796	76902.1	11.153	24913.9	3.618	0.013
0.860	77464.4	11.235	24939.1	3.617	0.036
0.922	76570.8	11.105	24975.4	3.622	0.000
0.979	75152.7	10.900	25001.4	3.626	-0.057

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9    MACH NO: 0.50    ADV. RATIO: 3.064  
POWER COEFF: 0.357    RECORD NO: 93.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 98.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	76210.0 PA	11.053 PSI
AIR DENSITY:	0.9381 KG/M3	0.05856 LBF/FT3
SPEED OF SOUND:	837.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.68 M/S	553.26 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1206.0	
ADVANCE RATIO:	3.064	
POWER COEFFICIENT:	0.357	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	0.694	

RUN DATE:	03-10-1987
RUN TIME:	15:34:12

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 93.0

RADIAL STATION: 9

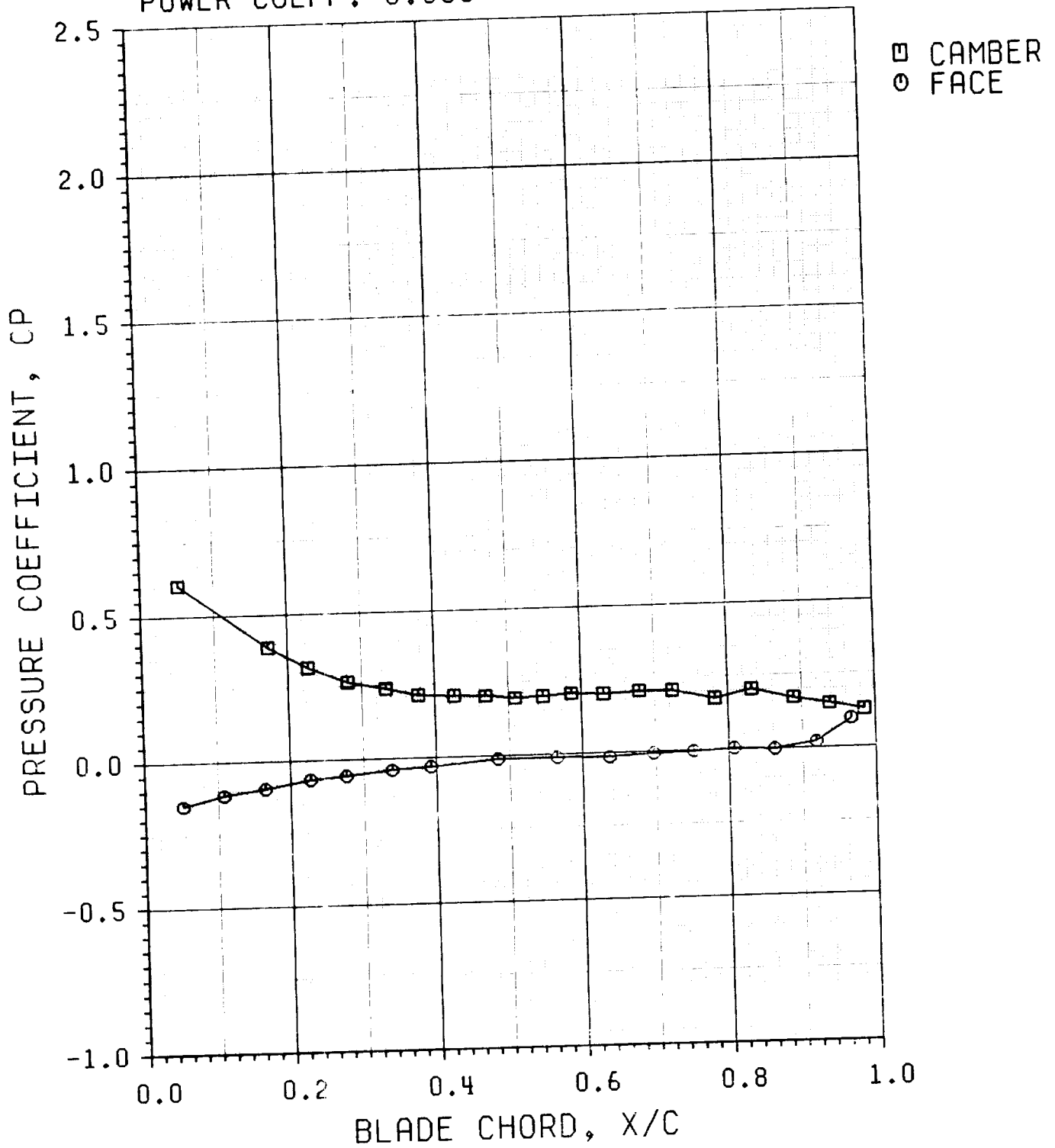
TUNNEL STATIC PRESSURE, P0: 76210.0 PA, 11.053 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	57841.5	8.389	25664.9	8.722	-0.716
0.084	64029.4	9.286	25668.9	8.723	-0.475
0.138	68577.1	9.946	25669.1	8.723	-0.297
0.182	69361.6	10.060	25667.1	8.723	-0.267
0.225	70120.5	10.170	25672.6	8.723	-0.237
0.268	70520.2	10.228	25666.5	3.722	-0.222
0.313	70913.6	10.285	25671.2	8.723	-0.206
0.353	70954.9	10.291	25672.1	8.723	-0.205
0.392	70732.9	10.269	25677.4	8.724	-0.213
0.434	71017.6	10.300	25678.4	8.724	-0.202
0.502	71186.6	10.324	25685.8	8.725	-0.196
0.556	71291.0	10.340	25698.3	8.726	-0.191
0.606	71148.9	10.319	25706.2	8.728	-0.197
0.665	71620.8	10.387	25707.8	8.728	-0.179
0.716	71403.4	10.356	25718.1	8.780	-0.187
0.770	71270.7	10.337	25723.7	3.731	-0.192
0.828	71974.7	10.439	25739.1	8.733	-0.165
0.892	72796.5	10.558	25749.9	8.735	-0.133
0.941	72983.9	10.585	25759.2	8.736	-0.125
0.984	73054.2	10.595	25764.9	8.737	-0.122
FACE					
0.041	79624.6	11.548	25660.3	3.722	0.133
0.086	79552.9	11.538	25661.5	8.722	0.130
0.144	78705.0	11.415	25656.7	8.721	0.097
0.192	78234.7	11.347	25656.5	8.721	0.079
0.238	77918.8	11.301	25656.2	3.721	0.067
0.288	78041.1	11.319	25657.4	3.721	0.071
0.348	77647.8	11.261	25661.2	3.722	0.056
0.450	77253.6	11.204	25664.1	8.722	0.041
0.539	77027.1	11.171	25680.5	8.725	0.082
0.631	76393.8	11.080	25687.7	3.726	0.007
0.688	76534.2	11.100	25698.3	3.727	0.013
0.748	76411.8	11.082	25705.7	3.728	0.008
0.804	76801.8	11.139	25722.4	3.731	0.023
0.863	76608.7	11.111	25732.1	3.782	0.015
0.920	75687.1	10.977	25743.5	8.784	-0.020
0.973	73654.6	10.682	25756.2	3.785	-0.099

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10    MACH NO: 0.50    ADV. RATIO: 3.073  
POWER COEFF: 0.365    RECORD NO: 153.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 153.0

## WIND TUNNEL:

STATIC TEMPERATURE:	282.0 K	47.9 F
STATIC PRESSURE:	76460.0 PA	11.089 PSI
AIR DENSITY:	0.9445 KG/M3	0.05896 LBF/FT3
SPEED OF SOUND:	836.66 M/S	1104.57 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.83 M/S	552.28 FT/S

## PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	8.073	
POWER COEFFICIENT:	0.365	
BLADE ANGLE (@ X=41" STA):	54.6 DEG.	
BLADE CHORD:	0.2064 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.8692 M	58.91 IN.
RADIUS RATIO (@ MID CHORD):	0.965	
REL MACH NO. (@ MID CHORD):	0.702	

RUN DATE:	03-12-1987
RUN TIME:	14:38:44

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 153.0

RADIAL STATION: 10

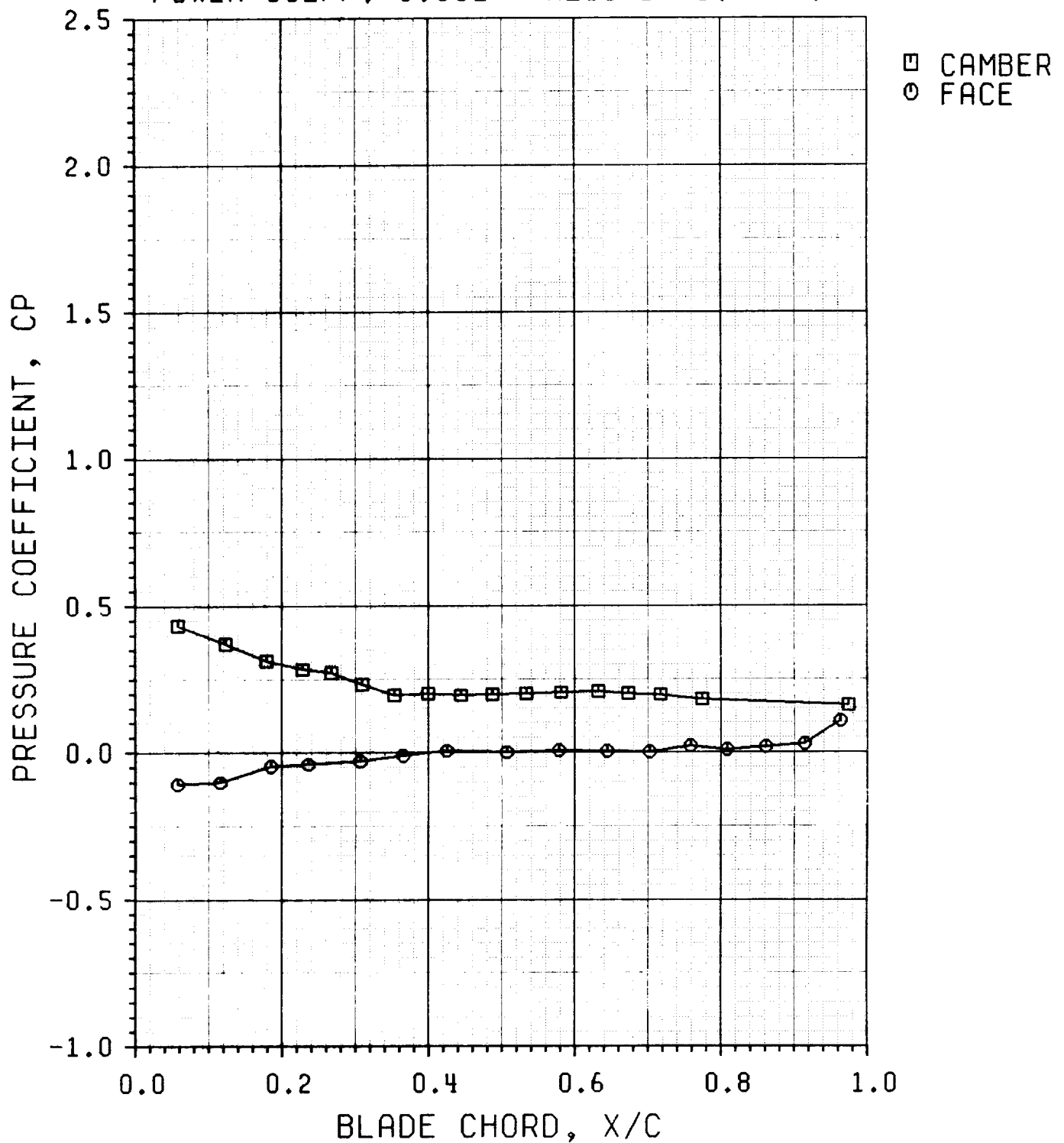
TUNNEL STATIC PRESSURE, PO: 76460.0 PA, 11.089 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	60509.8	8.776	26386.1	3.827	-0.604
0.113	*****	*****	26389.0	3.827	*****
0.173	66213.6	9.603	26384.7	3.827	-0.388
0.227	68156.7	9.885	26382.2	3.826	-0.815
0.281	69554.7	10.088	26382.6	3.826	-0.262
0.333	70198.7	10.181	26389.8	3.827	-0.237
0.377	70829.9	10.273	26383.0	3.826	-0.213
0.426	71005.5	10.298	26387.1	3.827	-0.207
0.469	71085.2	10.310	26393.7	3.828	-0.204
0.509	71328.1	10.345	26391.2	3.828	-0.194
0.547	71248.7	10.333	26393.8	3.828	-0.197
0.586	71083.4	10.309	26400.7	3.829	-0.204
0.630	71177.1	10.323	26396.0	3.828	-0.200
0.679	71019.4	10.300	26402.1	3.829	-0.206
0.724	71056.7	10.306	26407.1	3.830	-0.205
0.782	71827.9	10.417	26409.9	3.830	-0.175
0.832	71098.2	10.312	26416.6	3.831	-0.203
0.889	71945.6	10.434	26422.0	3.832	-0.171
0.938	72519.5	10.518	26432.3	3.834	-0.149
0.985	73086.1	10.600	26434.6	3.834	-0.128
FACE					
0.052	80452.6	11.668	26370.1	3.825	0.151
0.108	79519.9	11.533	26369.1	3.824	0.116
0.165	78972.5	11.454	26369.2	3.824	0.095
0.227	78258.9	11.350	26366.5	3.824	0.068
0.276	77960.8	11.307	26362.8	3.823	0.057
0.339	77534.2	11.245	26361.0	3.823	0.041
0.392	77306.1	11.212	26361.7	3.823	0.082
0.484	76781.5	11.136	26368.2	3.824	0.012
0.565	76810.6	11.140	26372.7	3.825	0.013
0.637	76877.3	11.150	26374.0	3.825	0.016
0.697	76654.7	11.117	26380.2	3.826	0.007
0.752	76560.3	11.104	26392.1	3.828	0.004
0.807	76414.4	11.083	26393.3	3.828	-0.002
0.862	76530.7	11.099	26403.4	3.829	0.003
0.919	75960.6	11.017	26413.8	3.831	-0.019
0.967	78911.7	10.720	26417.4	3.831	-0.096

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11 MACH NO: 0.50 ADV. RATIO: 3.065

POWER COEFF: 0.361 RECORD NO: 79.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 79.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	76250.0 PA	11.059 PSI
AIR DENSITY:	0.9589 KG/M3	0.05986 LBF/FT3
SPEED OF SOUND:	833.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.36 FT/S

## PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1193.0	
ADVANCE RATIO:	8.065	
POWER COEFFICIENT:	0.361	
BLADE ANGLE (@ X=41" STA):	55.1 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3689 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.707	

RUN DATE:	03-09-1987
RUN TIME:	21:50:05

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 79.0

RADIAL STATION: 11

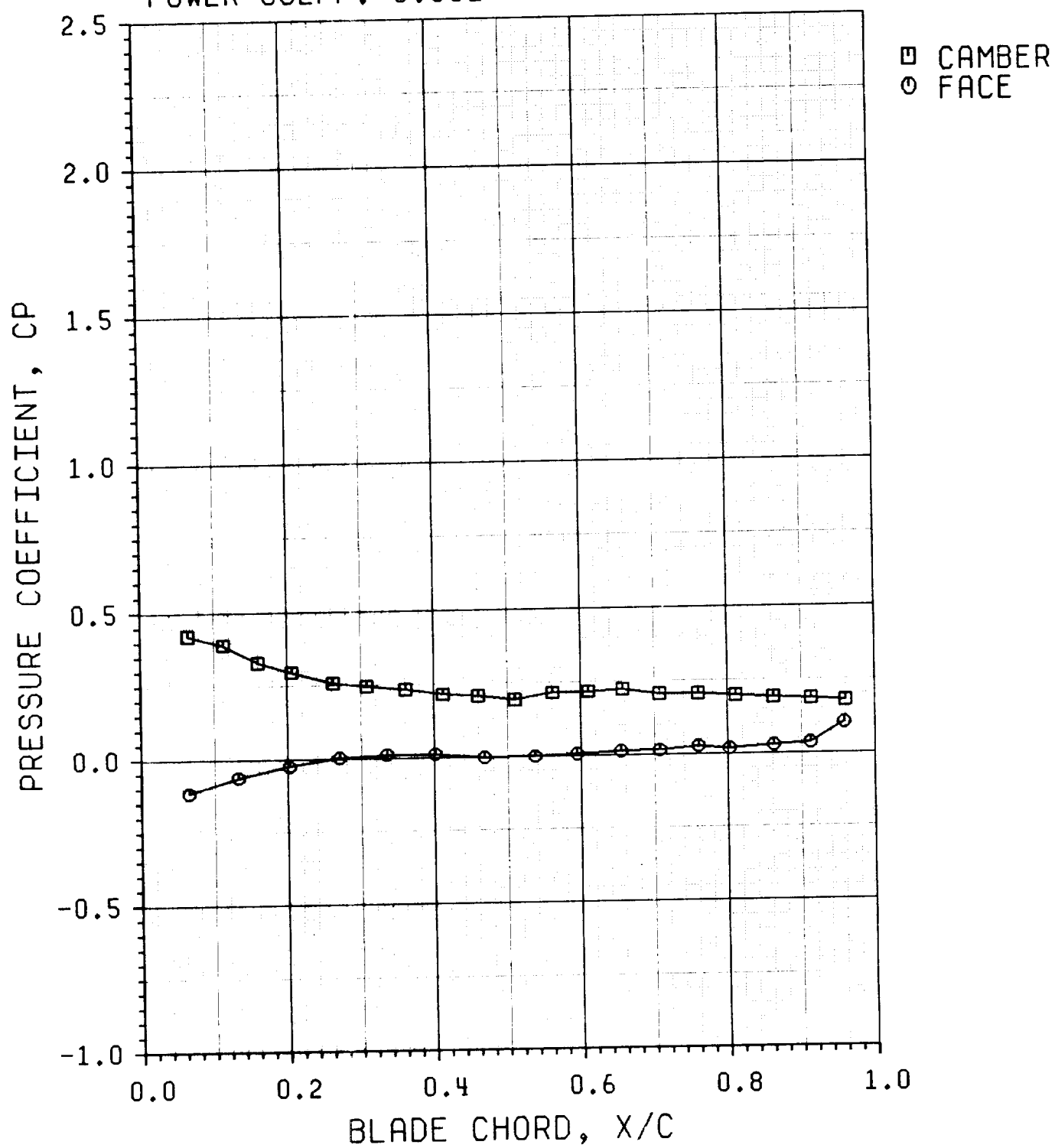
TUNNEL STATIC PRESSURE, P0: 76250.0 PA, 11.059 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	64732.9	9.388	26672.1	3.868	-0.432
0.123	66382.4	9.628	26680.8	3.870	-0.370
0.179	67896.9	9.847	26684.1	3.870	-0.313
0.228	68677.7	9.961	26684.6	3.870	-0.284
0.267	68958.7	10.001	26686.6	3.870	-0.273
0.309	70021.3	10.155	26680.9	3.870	-0.233
0.353	71040.4	10.303	26681.7	3.870	-0.195
0.399	70926.0	10.287	26682.3	3.870	-0.200
0.444	71067.6	10.307	26684.4	3.870	-0.194
0.487	70972.7	10.293	26688.3	3.871	-0.198
0.533	70919.9	10.286	26693.5	3.871	-0.200
0.581	70791.0	10.267	26696.1	3.872	-0.204
0.632	70710.7	10.255	26698.1	3.872	-0.207
0.673	70902.6	10.283	26701.3	3.873	-0.200
0.717	71030.5	10.302	26697.5	3.872	-0.196
0.774	71447.9	10.362	26704.6	3.873	-0.180
0.822	*****	*****	26705.5	3.873	*****
0.875	*****	*****	26707.1	3.873	*****
0.928	*****	*****	26722.9	3.876	*****
0.974	71974.2	10.439	26722.5	3.876	-0.160
FACE					
0.058	79118.7	11.474	26665.8	3.867	0.107
0.116	78934.2	11.448	26666.8	3.868	0.101
0.185	77515.6	11.242	26660.7	3.867	0.047
0.236	77356.6	11.219	26665.8	3.867	0.041
0.307	77074.7	11.178	26663.2	3.867	0.031
0.365	76573.9	11.106	26663.3	3.867	0.012
0.425	76148.3	11.044	26664.7	3.867	-0.004
0.507	76268.5	11.061	26661.7	3.867	0.001
0.578	76128.1	11.041	26669.1	3.868	-0.005
0.644	76198.9	11.051	26674.2	3.869	-0.002
0.702	76248.5	11.059	26674.5	3.869	0.000
0.758	75714.0	10.981	26682.1	3.870	-0.020
0.808	76047.7	11.029	26687.2	3.871	-0.008
0.861	75804.9	10.994	26690.8	3.871	-0.017
0.914	75497.2	10.950	26695.4	3.872	-0.023
0.963	73440.9	10.651	26701.1	3.873	-0.105

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.50    ADV. RATIO: 3.076

POWER COEFF: 0.362    RECORD NO: 124.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 124.0

WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	76370.0 PA	11.076 PSI
AIR DENSITY:	0.9569 KG/M3	0.05974 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.13 M/S	548.35 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1191.0	
ADVANCE RATIO:	3.076	
POWER COEFFICIENT:	0.362	
BLADE ANGLE (@ X=41" STA):	55.5 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3687 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.710	

RUN DATE:	03-11-1987
RUN TIME:	17:43:38



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 124.0

RADIAL STATION: 12

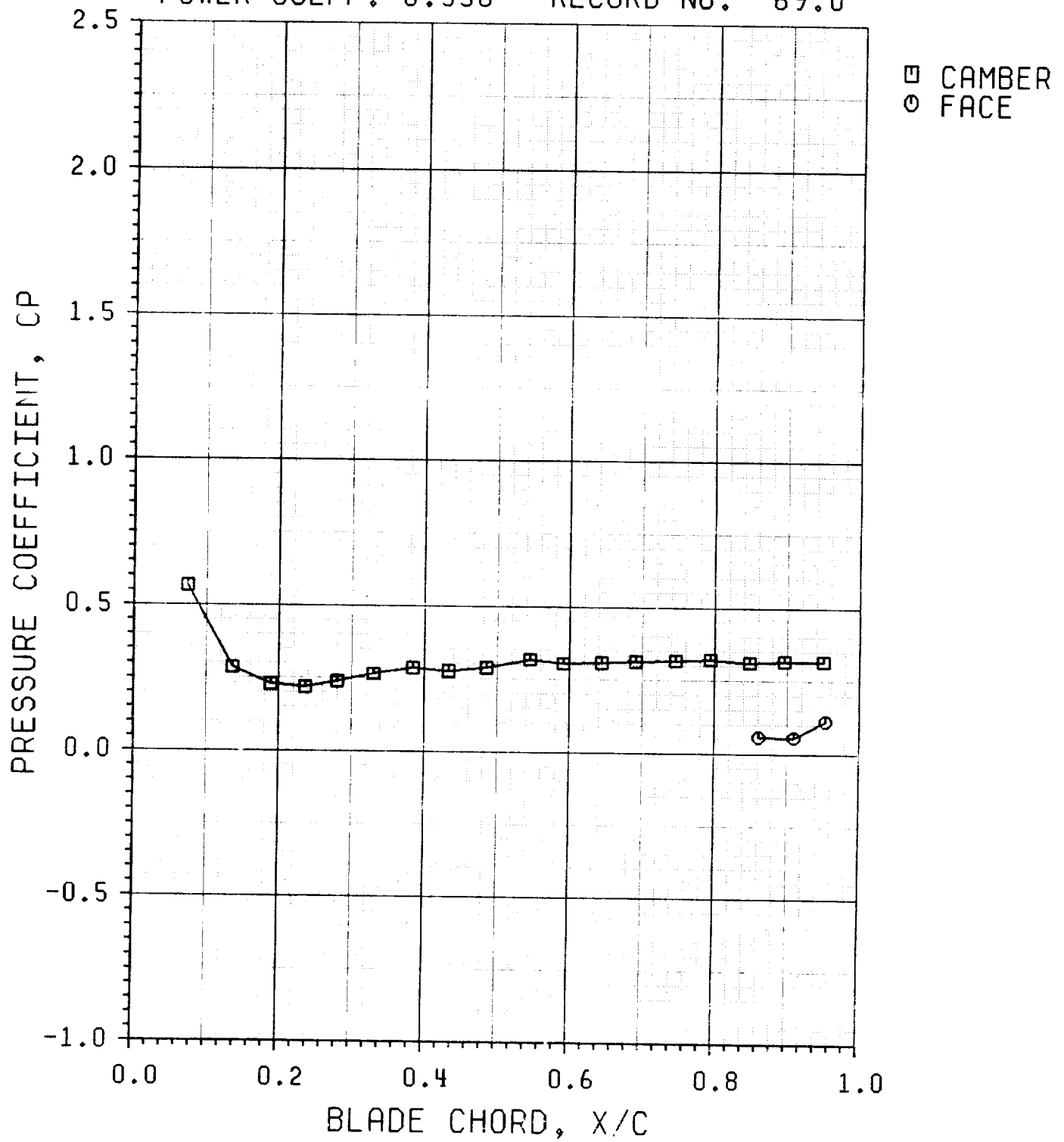
TUNNEL STATIC PRESSURE, PO: 76370.0 PA, 11.076 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	65011.9	9.429	26912.8	3.903	-0.422
0.113	65840.1	9.549	26918.4	3.904	-0.391
0.160	67488.6	9.788	26920.2	3.904	-0.380
0.206	68392.5	9.919	26918.3	3.904	-0.296
0.262	69462.6	10.074	26917.9	3.904	-0.257
0.308	69787.7	10.121	26913.2	3.903	-0.245
0.361	70123.0	10.170	26919.7	3.904	-0.232
0.412	70612.4	10.241	26914.7	3.904	-0.214
0.460	70773.2	10.264	26910.5	3.903	-0.208
0.510	71190.9	10.325	26917.1	3.904	-0.192
0.561	70619.7	10.242	26922.6	3.905	-0.214
0.610	70543.7	10.231	26929.4	3.906	-0.216
0.657	70375.1	10.207	26925.2	3.905	-0.223
0.707	70862.1	10.277	26926.4	3.905	-0.205
0.760	70861.7	10.277	26926.0	3.905	-0.205
0.811	71052.7	10.305	26927.8	3.905	-0.197
0.862	71248.4	10.333	26929.2	3.906	-0.190
0.913	71397.7	10.355	26935.7	3.907	-0.185
0.960	71597.1	10.384	26937.5	3.907	-0.177
FACE					
0.065	79495.8	11.529	26906.3	3.902	0.116
0.132	78098.7	11.327	26908.5	3.903	0.064
0.202	77056.8	11.176	26903.6	3.902	0.026
0.270	76823.9	11.069	26903.8	3.902	-0.002
0.335	76067.0	11.032	26902.2	3.902	-0.011
0.401	76082.4	11.034	26901.1	3.902	-0.011
0.468	76444.6	11.087	26901.0	3.902	0.003
0.537	76398.1	11.079	26899.0	3.901	0.001
0.594	76227.1	11.055	26905.8	3.902	-0.005
0.654	76012.7	11.024	26905.5	3.902	-0.013
0.707	76003.4	11.023	26912.7	3.903	-0.014
0.760	75682.3	10.976	26912.7	3.903	-0.026
0.802	75910.7	11.010	26910.6	3.903	-0.017
0.862	75605.3	10.965	26918.1	3.904	-0.028
0.912	75430.4	10.940	26916.1	3.904	-0.035
0.958	73588.7	10.672	26922.1	3.905	-0.103

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13 MACH NO: 0.50 ADV. RATIO: 3.065

POWER COEFF: 0.356 RECORD NO: 69.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 69.0

WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	76070.0 PA	11.033 PSI
AIR DENSITY:	0.9363 KG/M3	0.05846 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.63 M/S	553.26 FT/S

PROPFAN:

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1206.0	
ADVANCE RATIO:	8.065	
POWER COEFFICIENT:	0.856	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	0.714	

RUN DATE:	03-09-1987
RUN TIME:	18:07:39

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 69.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, P0: 76070.0 PA, 11.033 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	60694.7	8.803	27191.5	8.944	-0.565
0.186	68342.5	9.912	27193.2	8.944	-0.284
0.189	69870.1	10.133	27180.6	3.942	-0.228
0.286	70144.8	10.173	27182.4	3.942	-0.218
0.280	69633.0	10.099	27188.7	8.948	-0.237
0.330	68906.4	9.994	27176.2	3.941	-0.264
0.384	68337.0	9.911	27177.9	3.942	-0.285
0.433	68593.5	9.948	27177.9	3.942	-0.275
0.485	68265.1	9.901	27171.5	8.941	-0.287
0.545	67479.4	9.787	27171.8	3.941	-0.316
0.591	67802.9	9.834	27172.7	3.941	-0.304
0.644	67738.2	9.824	27168.8	3.940	-0.307
0.691	67574.2	9.800	27166.7	3.940	-0.313
0.746	67482.6	9.787	27166.1	3.940	-0.316
0.794	67337.4	9.766	27170.8	3.941	-0.321
0.848	67617.2	9.807	27168.7	3.940	-0.311
0.896	67476.6	9.786	27168.6	3.940	-0.316
0.950	67494.2	9.789	27169.9	8.941	-0.316
FACE					
0.074	*****	*****	27178.8	3.942	*****
0.150	*****	*****	27174.8	3.941	*****
0.229	*****	*****	27177.2	3.942	*****
0.302	*****	*****	27167.8	3.940	*****
0.374	*****	*****	27167.1	3.940	*****
0.450	*****	*****	27164.7	3.940	*****
0.519	*****	*****	27158.5	3.939	*****
0.569	*****	*****	27158.3	3.939	*****
0.619	*****	*****	27159.3	3.939	*****
0.669	*****	*****	27161.0	3.939	*****
0.716	*****	*****	27161.0	3.939	*****
0.762	*****	*****	27159.7	3.939	*****
0.810	*****	*****	27155.8	3.938	*****
0.861	74482.6	10.802	27150.8	3.938	-0.058
0.910	74551.1	10.812	27161.6	3.939	-0.056
0.953	73031.6	10.592	27155.7	3.938	-0.112

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B9

(B9.1 through B9.13)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.500 \pm 0.001$

Advance Ratio,  $J = 3.083 \pm 0.008$

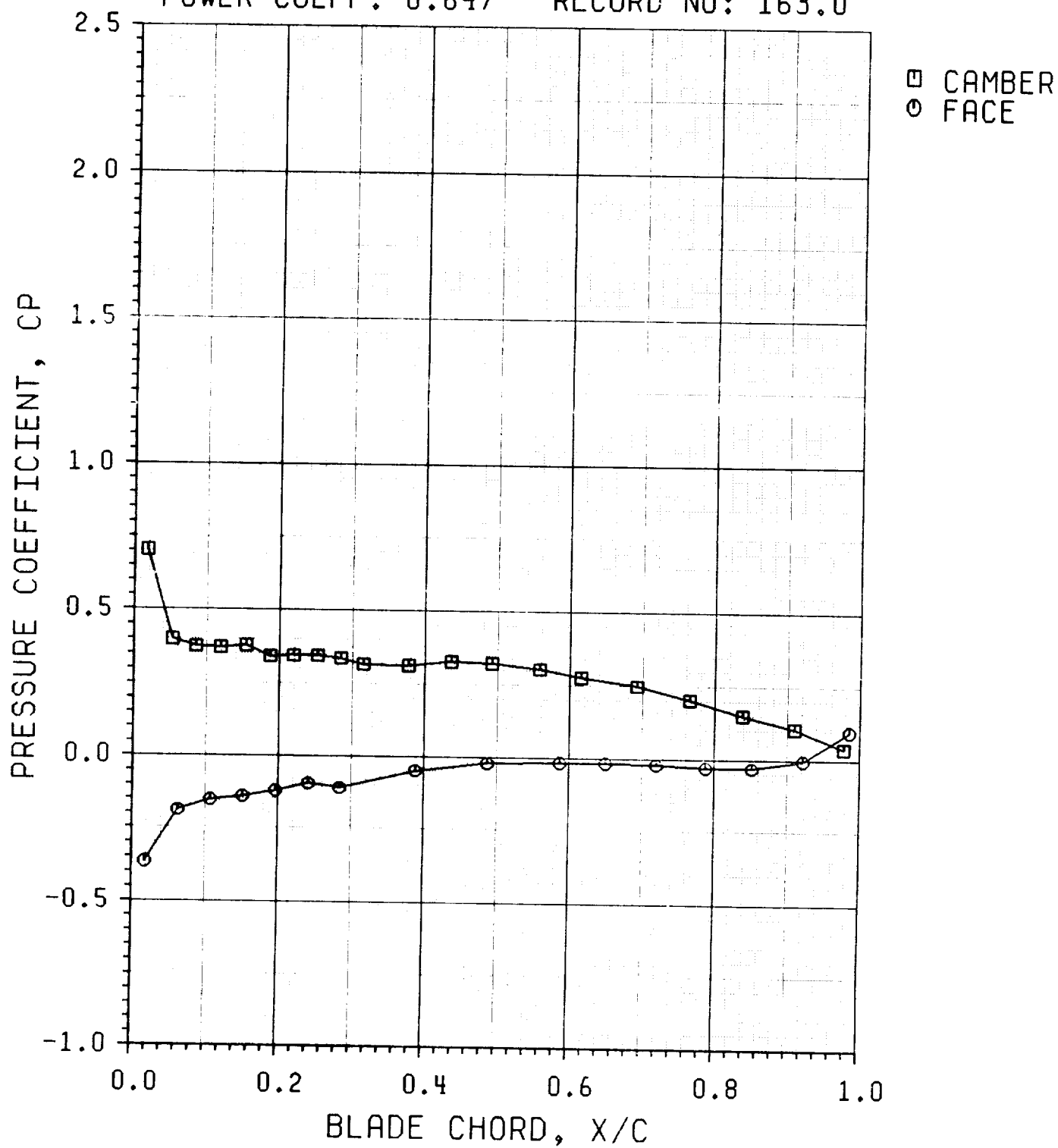
Power Coefficient,  $CP = 0.642 \pm 0.009$

Blade Angle,  $\beta = 58.5 \pm 1.0^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.50 ADV. RATIO: 3.077

POWER COEFF: 0.647 RECORD NO: 163.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 163.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	76450.0 PA	11.088 PSI
AIR DENSITY:	0.9545 KG/M3	0.05959 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.43 M/S	549.34 FT/S

## PROPFAN:

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RADIAL STATION:	1	
ROTOR SPEED (RPM):	1194.0	
ADVANCE RATIO:	3.077	
POWER COEFFICIENT:	0.647	
BLADE ANGLE (@ X=41" STA):	58.1 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3672 M	53.83 IN.
RADIUS RATIO (@ MID CHORD):	0.309	
REL MACH NO. (@ MID CHORD):	0.524	

RUN DATE:	03-12-1987
RUN TIME:	17:20:09

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 163.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, P0: 76450.0 PA, 11.088 PSI

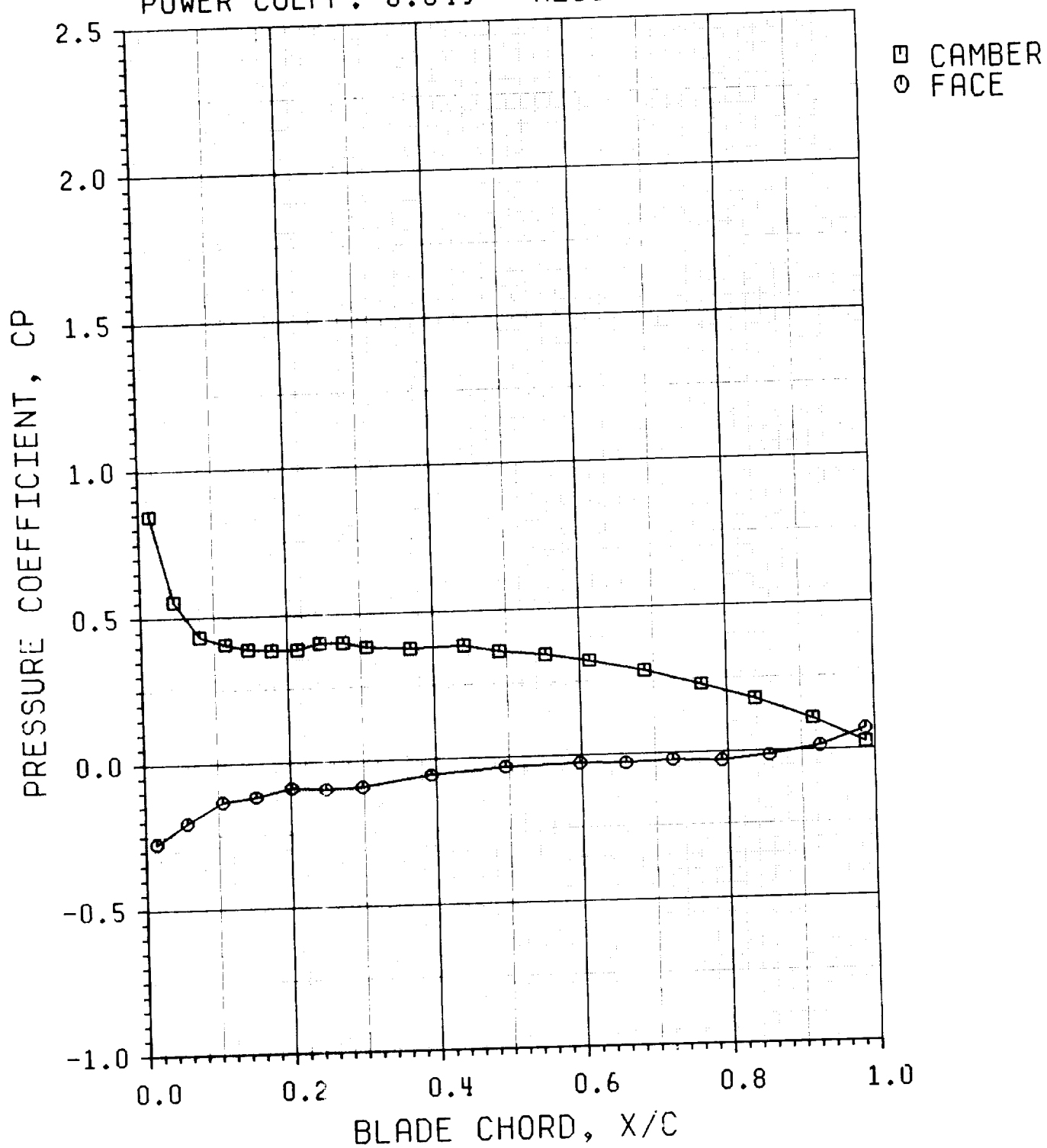
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	66322.9	9.619	14404.9	2.089	-0.708
0.053	70705.2	10.255	14420.8	2.091	-0.898
0.085	71047.1	10.304	14435.2	2.094	-0.874
0.119	71098.8	10.312	14452.6	2.096	-0.870
0.154	70995.6	10.297	14470.1	2.099	-0.877
0.187	71503.1	10.370	14489.2	2.101	-0.841
0.219	71464.7	10.365	14508.0	2.104	-0.844
0.252	71458.6	10.363	14526.0	2.107	-0.844
0.284	71561.8	10.379	14544.5	2.109	-0.836
0.315	71854.4	10.421	14565.3	2.112	-0.816
0.377	71884.1	10.426	14604.8	2.118	-0.313
0.436	71643.0	10.391	14646.1	2.124	-0.828
0.492	71729.7	10.403	14671.8	2.128	-0.322
0.558	71967.7	10.438	14780.5	2.136	-0.804
0.615	72359.7	10.495	14773.9	2.143	-0.277
0.692	72761.8	10.553	14827.6	2.150	-0.249
0.765	73439.6	10.651	14889.4	2.159	-0.202
0.838	74209.7	10.763	14943.9	2.167	-0.150
0.910	74873.7	10.859	15003.9	2.176	-0.105
0.978	75886.4	11.006	15059.1	2.184	-0.037
FACE					
0.018	81736.3	11.854	14409.1	2.090	0.367
0.063	79203.2	11.487	14446.5	2.095	0.191
0.107	78693.2	11.413	14474.0	2.099	0.155
0.151	78530.0	11.389	14499.0	2.103	0.143
0.196	78242.7	11.348	14525.9	2.107	0.123
0.241	77841.8	11.290	14551.5	2.110	0.096
0.284	78068.4	11.322	14574.6	2.114	0.111
0.388	77171.1	11.192	14636.2	2.123	0.049
0.487	76765.4	11.133	14699.8	2.132	0.021
0.587	76704.7	11.125	14765.4	2.141	0.017
0.650	76708.9	11.125	14804.4	2.147	0.017
0.720	76763.7	11.133	14852.0	2.154	0.021
0.788	76892.1	11.152	14902.8	2.161	0.030
0.852	76919.4	11.156	14951.0	2.168	0.031
0.922	76530.7	11.099	15005.6	2.176	0.005
0.985	75025.9	10.881	15058.5	2.184	-0.095

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 2    MACH NO: 0.50    ADV. RATIO: 3.075

POWER COEFF: 0.649    RECORD NO: 216.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 216.0

WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	76040.0 PA	11.028 PSI
AIR DENSITY:	0.9597 KG/M3	0.05991 LBF/FT3
SPEED OF SOUND:	383.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.53 M/S	546.38 FT/S

PROPFAN:

RADIAL STATION:	2	
ROTOR SPEED (RPM):	1188.0	
ADVANCE RATIO:	3.075	
POWER COEFFICIENT:	0.649	
BLADE ANGLE (@ X=41" STA):	57.8 DEG.	
BLADE CHORD:	0.5404 M	21.28 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3674 M	53.84 IN.
RADIUS RATIO (@ MID CHORD):	0.445	
REL MACH NO. (@ MID CHORD):	0.549	

RUN DATE:	03-13-1987
RUN TIME:	23:38:50

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 216.0

RADIAL STATION: 2

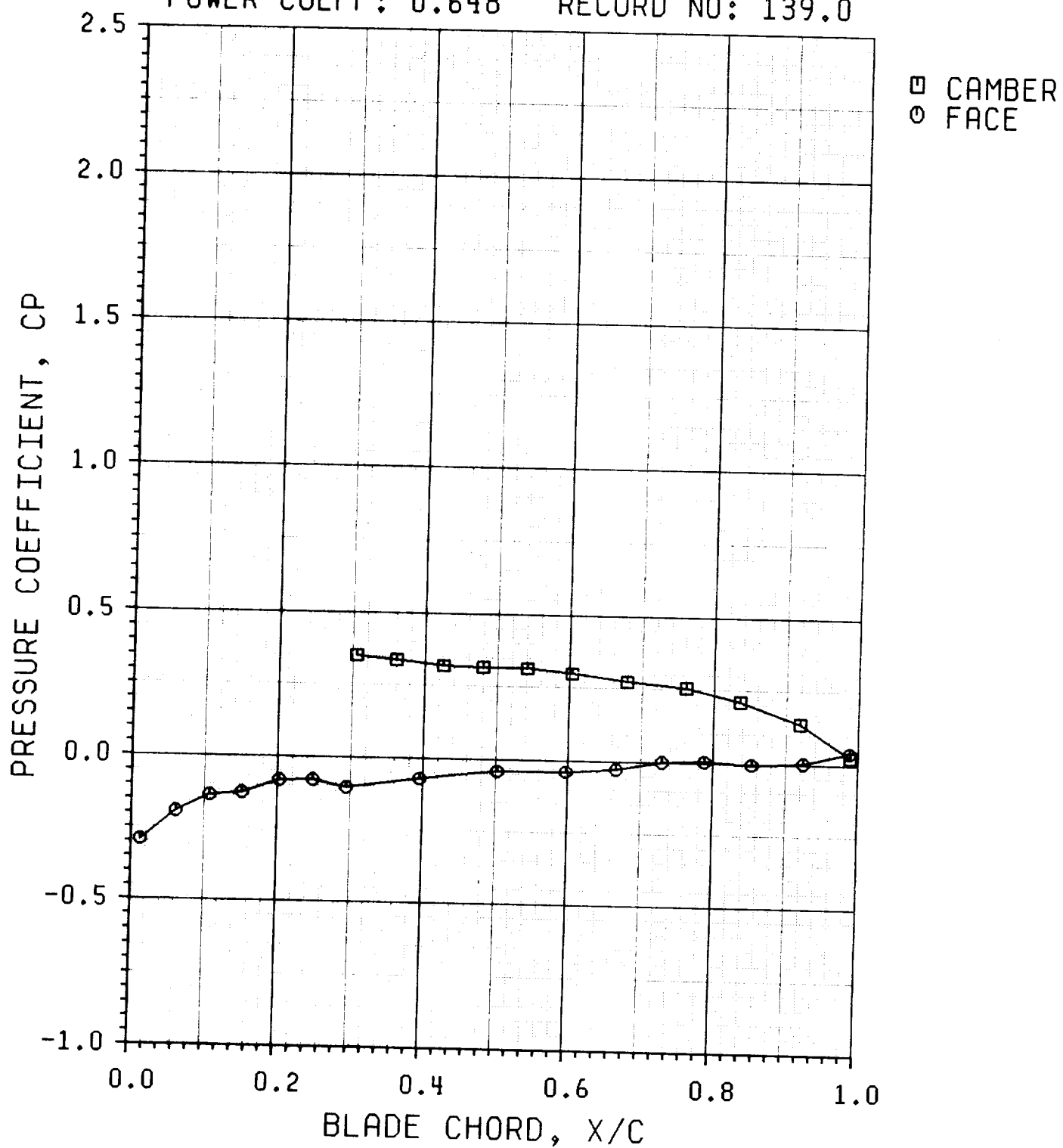
TUNNEL STATIC PRESSURE, PO: 76040.0 PA, 11.028 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	62738.8	9.099	15751.7	2.285	-0.844
0.046	67825.8	9.764	15761.5	2.286	-0.553
0.080	69207.6	10.037	15771.4	2.287	-0.433
0.115	69634.6	10.099	15786.6	2.290	-0.406
0.146	69922.9	10.141	15798.0	2.291	-0.887
0.178	70010.1	10.154	15792.1	2.290	-0.382
0.213	69990.6	10.151	15825.1	2.295	-0.382
0.244	69663.2	10.103	15841.2	2.297	-0.403
0.276	69655.0	10.102	15855.5	2.300	-0.403
0.308	69906.9	10.139	15873.7	2.302	-0.386
0.368	70038.0	10.158	15907.5	2.307	-0.377
0.442	69944.8	10.144	15945.3	2.313	-0.382
0.490	70279.2	10.193	15983.4	2.318	-0.360
0.553	70510.9	10.226	16025.1	2.324	-0.345
0.613	70880.0	10.280	16068.5	2.330	-0.321
0.688	71474.8	10.366	16123.3	2.338	-0.283
0.765	72303.2	10.486	16181.8	2.347	-0.281
0.838	73156.9	10.610	16243.0	2.356	-0.177
0.916	74305.8	10.777	16311.4	2.366	-0.106
0.987	75656.7	10.973	16371.5	2.874	-0.023
FACE					
0.015	80366.9	11.656	15763.7	2.286	0.274
0.057	79280.7	11.498	15780.5	2.289	0.205
0.106	78176.4	11.338	15801.1	2.292	0.135
0.152	77928.3	11.302	15823.3	2.295	0.119
0.201	77476.9	11.237	15841.9	2.298	0.091
0.248	77593.2	11.254	15865.0	2.301	0.098
0.298	77495.9	11.239	15888.5	2.304	0.092
0.393	76927.3	11.157	15939.9	2.312	0.056
0.495	76588.3	11.108	16000.2	2.321	0.034
0.597	76477.5	11.092	16067.6	2.330	0.027
0.660	76534.4	11.100	16109.9	2.336	0.031
0.724	76423.7	11.084	16156.4	2.348	0.024
0.791	76523.8	11.098	16206.1	2.350	0.030
0.856	76298.6	11.066	16260.1	2.358	0.016
0.925	75847.6	11.000	16318.1	2.367	-0.012
0.987	74935.2	10.868	16375.0	2.375	-0.067

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3 MACH NO: 0.50 ADV. RATIO: 3.093

POWER COEFF: 0.648 RECORD NO: 139.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 139.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	76560.0 PA	11.104 PSI
AIR DENSITY:	0.9628 KG/M3	0.06011 LBF/FT3
SPEED OF SOUND:	333.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.36 FT/S

## PROPFAN:

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RADIAL STATION:	3	
ROTOR SPEED (RPM):	1184.0	
ADVANCE RATIO:	3.093	
POWER COEFFICIENT:	0.648	
BLADE ANGLE (@ X=41" STA):	58.8 DEG.	
BLADE CHORD:	0.5781 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3669 M	53.81 IN.
RADIUS RATIO (@ MID CHORD):	0.569	
REL MACH NO. (@ MID CHORD):	0.577	

RUN DATE:	03-11-1987
RUN TIME:	21:33:56

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 139.0

RADIAL STATION: 3

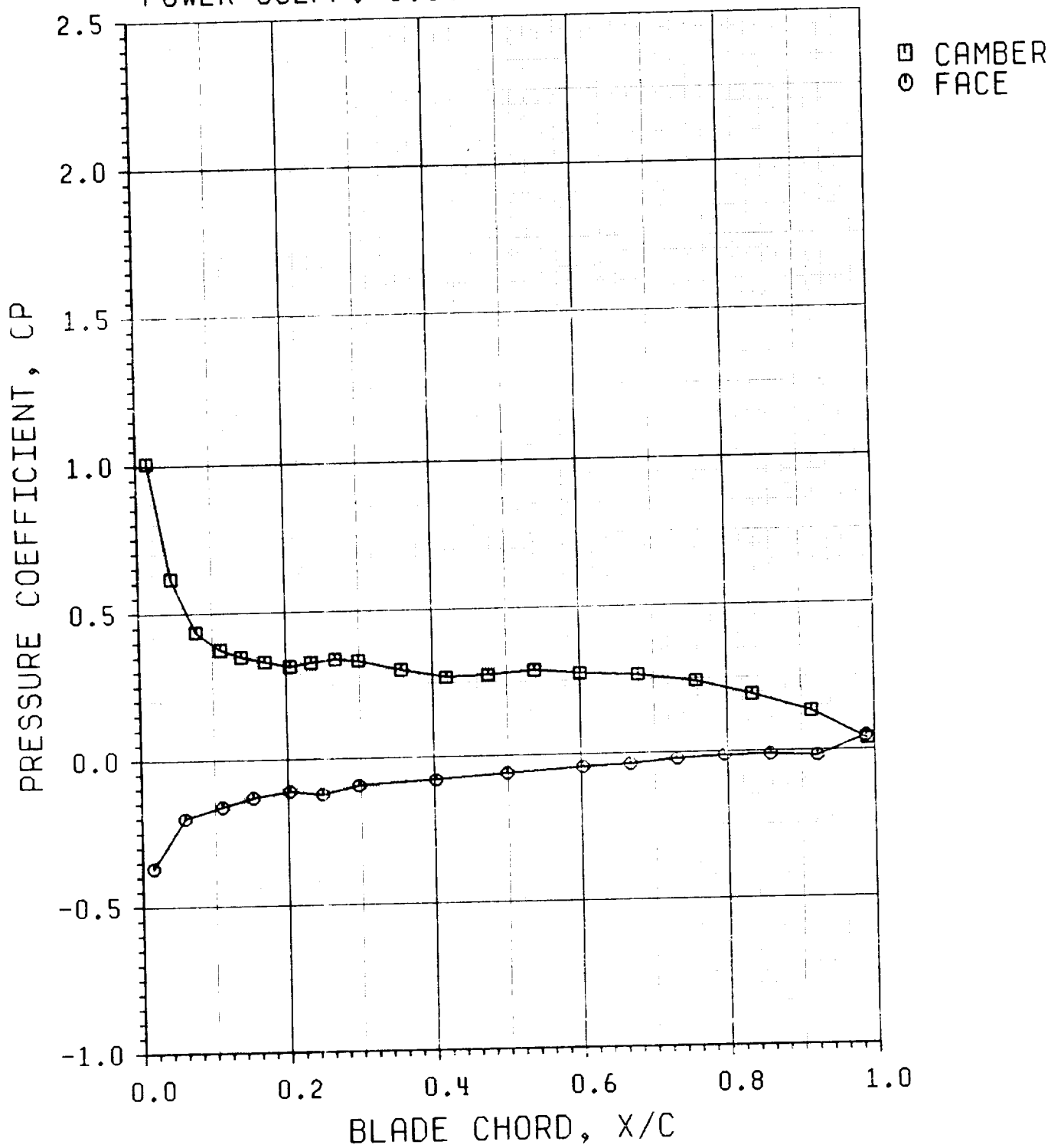
TUNNEL STATIC PRESSURE, PO: 76560.0 PA, 11.104 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	*****	*****	17605.6	2.553	*****
0.046	*****	*****	17612.4	2.554	*****
0.077	*****	*****	17618.7	2.555	*****
0.107	*****	*****	17621.7	2.556	*****
0.139	*****	*****	17626.4	2.556	*****
0.173	*****	*****	17681.3	2.557	*****
0.201	*****	*****	17641.8	2.559	*****
0.238	*****	*****	17651.2	2.560	*****
0.271	*****	*****	17663.6	2.562	*****
0.305	70852.9	10.203	17678.1	2.564	-0.351
0.360	70576.6	10.236	17699.3	2.567	-0.388
0.425	70911.9	10.285	17730.6	2.572	-0.319
0.480	70941.2	10.289	17754.3	2.575	-0.316
0.541	70979.8	10.294	17795.4	2.581	-0.314
0.603	71236.6	10.332	17828.7	2.586	-0.299
0.679	71654.2	10.392	17884.6	2.594	-0.274
0.761	71992.8	10.441	17941.5	2.602	-0.255
0.836	72774.5	10.555	18001.8	2.611	-0.210
0.919	74092.2	10.746	18069.7	2.621	-0.137
0.989	76132.3	11.042	18131.8	2.630	-0.024
FACE					
0.013	81740.7	11.855	17615.3	2.555	0.294
0.061	79988.7	11.601	17625.9	2.556	0.195
0.107	78969.7	11.453	17634.1	2.558	0.137
0.151	78812.0	11.430	17648.7	2.559	0.128
0.202	78016.9	11.315	17657.3	2.561	0.083
0.248	77978.4	11.309	17669.6	2.563	0.080
0.294	78424.0	11.374	17684.7	2.565	0.105
0.395	77814.1	11.286	17723.2	2.570	0.071
0.502	77293.1	11.210	17778.0	2.578	0.041
0.597	77253.9	11.204	17826.0	2.585	0.039
0.666	77063.4	11.177	17876.2	2.593	0.028
0.729	76556.4	11.103	17910.2	2.598	0.000
0.788	76490.2	11.094	17953.9	2.604	-0.004
0.853	76624.6	11.113	18007.7	2.612	0.004
0.924	76506.1	11.096	18064.9	2.620	-0.003
0.988	75848.5	11.001	18126.2	2.629	-0.039

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 4    MACH NO: 0.50    ADV. RATIO: 3.079

POWER COEFF: 0.649    RECORD NO: 203.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST ---

OPERATING PARAMETERS FOR RECORD NUMBER: 203.0

## WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	76100.0 PA	11.037 PSI
AIR DENSITY:	0.9536 KG/M3	0.05953 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.13 M/S	548.35 FT/S

## PROPFAN:

RADIAL STATION:	4	
ROTOR SPEED (RPM):	1191.0	
ADVANCE RATIO:	3.079	
POWER COEFFICIENT:	0.649	
BLADE ANGLE (@ X=41" STA):	57.8 DEG.	
BLADE CHORD:	0.5676 M	22.35 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3674 M	53.84 IN.
RADIUS RATIO (@ MID CHORD):	0.668	
REL MACH NO. (@ MID CHORD):	0.605	

RUN DATE:	03-13-1987
RUN TIME:	18:41:18



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 203.0

RADIAL STATION: 4

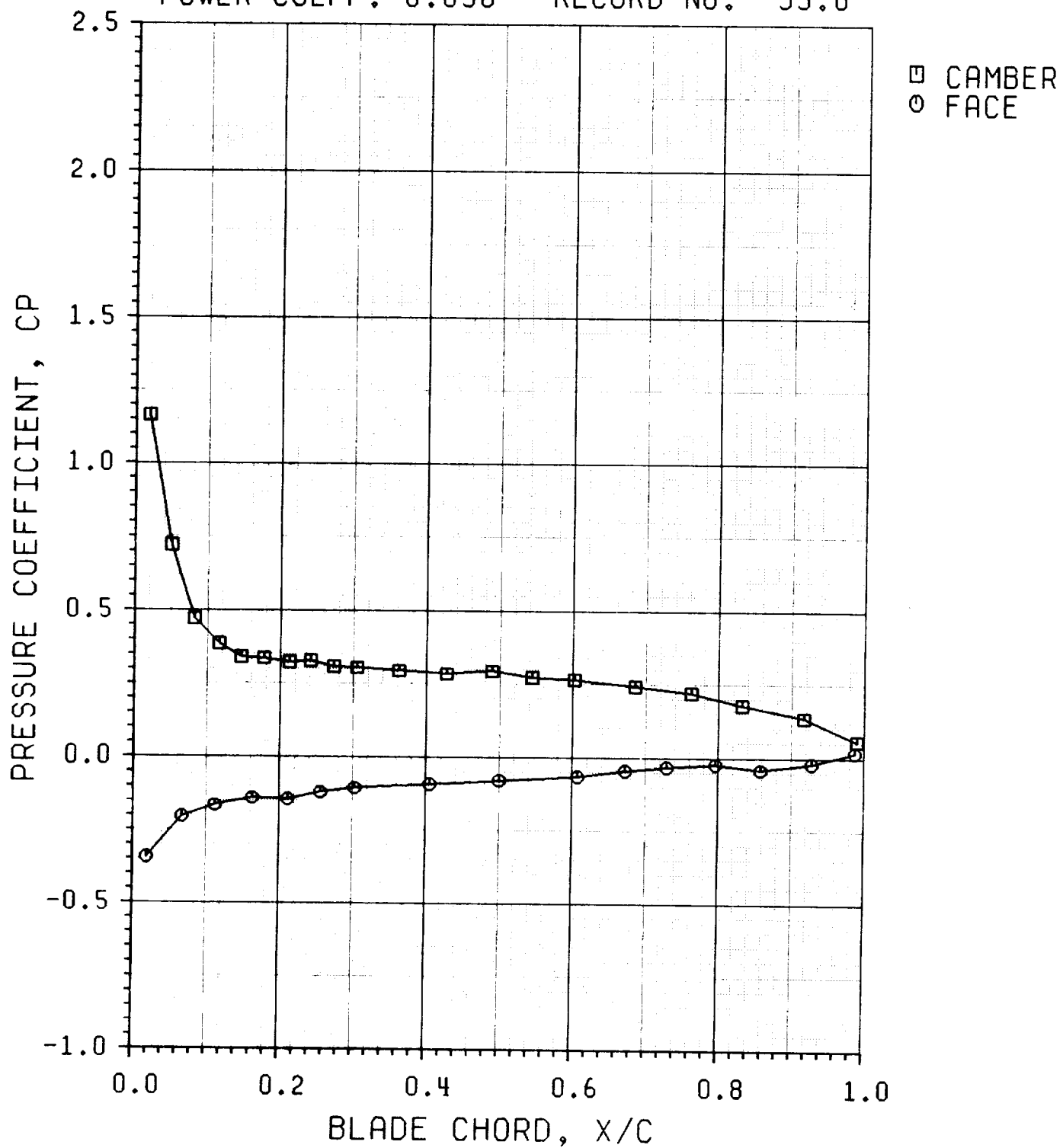
TUNNEL STATIC PRESSURE, PO: 76100.0 PA, 11.037 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.015	56681.1	8.221	19281.2	2.796	-1.007
0.045	64234.8	9.316	19280.8	2.796	-0.615
0.078	67698.2	9.818	19276.2	2.796	-0.436
0.111	68867.1	9.988	19274.2	2.795	-0.375
0.139	69352.2	10.058	19274.7	2.795	-0.350
0.171	69672.4	10.105	19274.3	2.795	-0.333
0.205	70033.3	10.157	19277.5	2.796	-0.315
0.234	69803.3	10.124	19278.8	2.796	-0.327
0.267	69587.4	10.092	19287.3	2.797	-0.338
0.299	69717.7	10.111	19291.2	2.798	-0.331
0.357	70358.6	10.204	19306.7	2.800	-0.297
0.418	70891.7	10.282	19326.5	2.803	-0.269
0.475	70792.7	10.267	19348.5	2.806	-0.274
0.538	70529.6	10.229	19378.6	2.811	-0.287
0.600	70780.8	10.266	19407.9	2.815	-0.274
0.679	70917.1	10.285	19458.0	2.822	-0.266
0.758	71400.9	10.355	19511.7	2.830	-0.241
0.834	72334.6	10.491	19573.2	2.839	-0.192
0.914	78481.4	10.657	19644.6	2.849	-0.133
0.990	75392.6	10.934	19713.2	2.859	-0.036
FACE					
0.015	83245.2	12.073	19296.8	2.799	0.370
0.059	79978.9	11.600	19297.3	2.799	0.201
0.110	79237.2	11.492	19294.1	2.798	0.163
0.152	78670.8	11.410	19294.5	2.798	0.133
0.202	78282.0	11.353	19300.9	2.799	0.113
0.247	78494.6	11.384	19304.4	2.800	0.124
0.297	77958.7	11.307	19312.9	2.801	0.096
0.402	77664.3	11.264	19338.7	2.805	0.081
0.499	77320.1	11.214	19382.0	2.811	0.063
0.602	76981.7	11.165	19431.2	2.818	0.045
0.667	76835.3	11.144	19456.5	2.822	0.038
0.731	76524.3	11.099	19504.0	2.829	0.022
0.796	76378.3	11.077	19552.3	2.836	0.014
0.858	76333.3	11.071	19596.9	2.842	0.012
0.922	76477.8	11.092	19651.3	2.850	0.019
0.988	75204.6	10.907	19712.7	2.859	-0.045

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.50 ADV. RATIO: 3.080

POWER COEFF: 0.650 RECORD NO: 53.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 53.0

## WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	76580.0 PA	11.107 PSI
AIR DENSITY:	0.9665 KG/M3	0.06034 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.53 M/S	546.38 FT/S

## PROPFAN:

RADIAL STATION:	5	
ROTOR SPEED (RPM):	1186.0	
ADVANCE RATIO:	3.080	
POWER COEFFICIENT:	0.650	
BLADE ANGLE (@ X=41" STA):	57.5 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3676 M	53.84 IN.
RADIUS RATIO (@ MID CHORD):	0.789	
REL MACH NO. (@ MID CHORD):	0.626	

RUN DATE:	03-06-1987
RUN TIME:	18:01:10

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 53.0

RADIAL STATION: 5

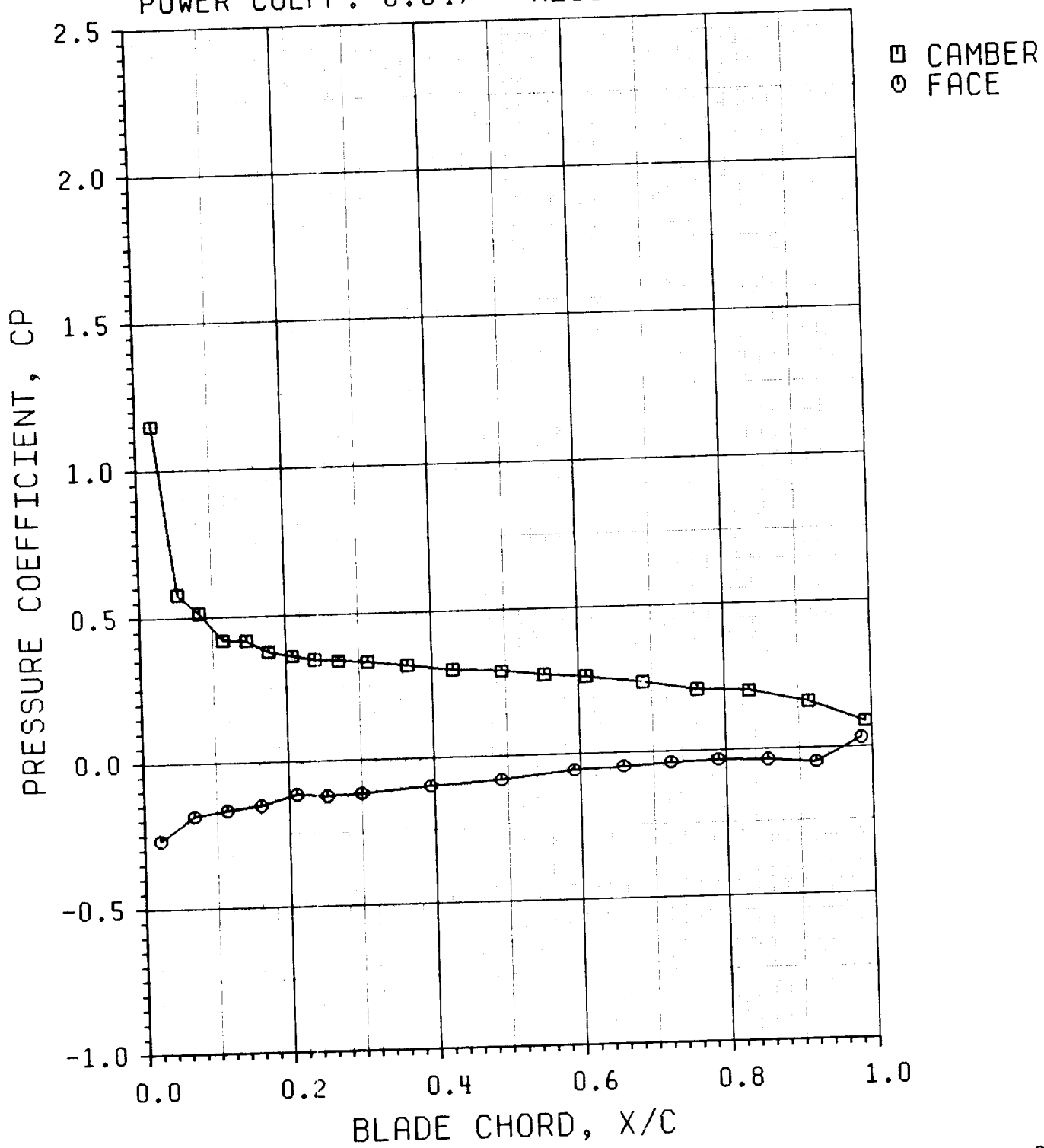
TUNNEL STATIC PRESSURE, P0: 76580.0 PA, 11.107 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	52329.8	7.590	20855.6	3.025	-1.163
0.050	61579.8	8.981	20847.3	3.024	-0.720
0.082	66792.1	9.687	20837.8	3.022	-0.470
0.116	68549.4	9.942	20831.8	3.021	-0.385
0.146	69494.3	10.079	20826.4	3.021	-0.340
0.177	69582.6	10.092	20823.4	3.020	-0.336
0.212	69869.7	10.133	20821.6	3.020	-0.322
0.241	69778.4	10.120	20821.4	3.020	-0.327
0.273	70166.2	10.176	20821.8	3.020	-0.308
0.305	70250.9	10.189	20823.1	3.020	-0.304
0.362	70464.1	10.220	20831.8	3.021	-0.294
0.427	70659.6	10.248	20846.1	3.023	-0.284
0.489	70443.4	10.217	20859.0	3.025	-0.294
0.544	70894.7	10.282	20878.6	3.028	-0.272
0.602	71035.4	10.302	20907.3	3.032	-0.265
0.685	71490.4	10.368	20946.6	3.038	-0.243
0.762	71965.4	10.437	20990.5	3.044	-0.220
0.832	72846.5	10.565	21036.5	3.051	-0.177
0.917	73761.8	10.698	21100.4	3.060	-0.134
0.990	75389.6	10.934	21159.1	3.069	-0.056
FACE					
0.019	83782.9	12.151	20866.9	3.026	0.345
0.067	80857.2	11.727	20853.2	3.024	0.205
0.112	80029.6	11.607	20839.4	3.022	0.166
0.163	79516.1	11.532	20835.1	3.022	0.141
0.211	79599.8	11.545	20835.2	3.022	0.145
0.256	79106.3	11.473	20835.6	3.022	0.121
0.303	78780.4	11.426	20836.3	3.022	0.106
0.405	78500.0	11.385	20844.5	3.023	0.092
0.500	78225.2	11.345	20865.6	3.026	0.079
0.607	77944.7	11.305	20911.1	3.033	0.065
0.672	77514.6	11.242	20937.1	3.037	0.045
0.729	77267.8	11.206	20971.4	3.042	0.033
0.796	77054.2	11.175	21008.9	3.047	0.023
0.858	77435.7	11.231	21047.2	3.053	0.041
0.928	77001.7	11.168	21100.5	3.060	0.020
0.987	76213.2	11.053	21151.1	3.068	-0.017

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.50 ADV. RATIO: 3.075

POWER COEFF: 0.647 RECORD NO: 190.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 190.0

WIND TUNNEL:

STATIC TEMPERATURE:	282.0 K	47.9 F
STATIC PRESSURE:	76140.0 PA	11.043 PSI
AIR DENSITY:	0.9405 KG/M3	0.05872 LBF/FT3
SPEED OF SOUND:	336.66 M/S	1104.57 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.33 M/S	552.28 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1201.0	
ADVANCE RATIO:	3.075	
POWER COEFFICIENT:	0.647	
BLADE ANGLE (@ X=41" STA):	57.9 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3674 M	53.83 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.648	

RUN DATE:	03-13-1987
RUN TIME:	14:38:24

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 190.0

RADIAL STATION: 6

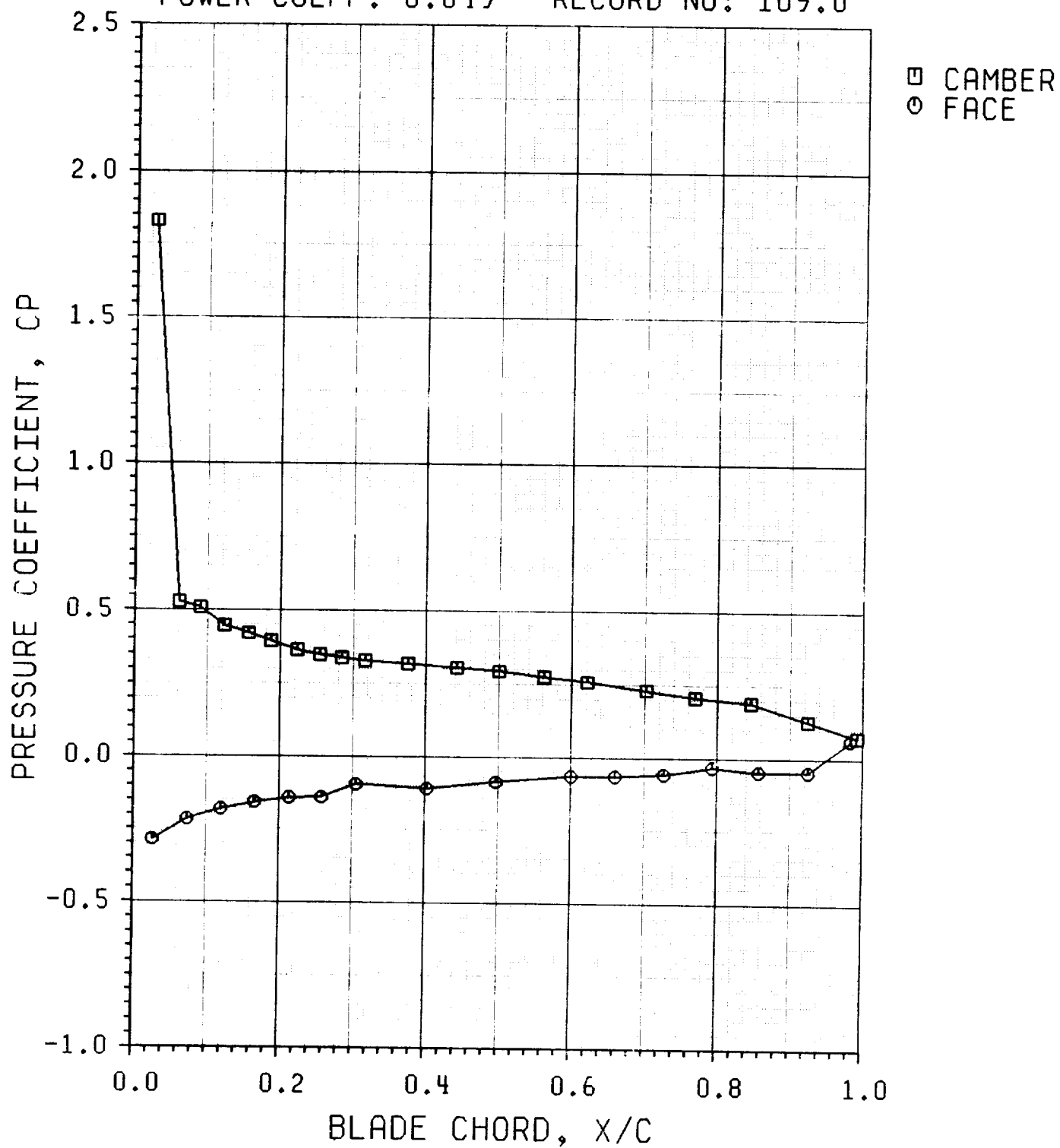
TUNNEL STATIC PRESSURE, PO: 76140.0 PA, 11.043 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	50582.8	7.386	22248.6	3.227	-1.149
0.053	68322.2	9.184	22241.9	3.226	-0.576
0.082	64751.9	9.391	22236.8	3.225	-0.512
0.114	66814.7	9.690	22238.0	3.225	-0.419
0.146	66889.9	9.701	22235.4	3.225	-0.416
0.176	67772.2	9.829	22225.2	3.223	-0.376
0.208	68166.7	9.886	22224.4	3.223	-0.359
0.239	68471.7	9.931	22227.3	3.224	-0.345
0.272	68602.4	9.950	22226.2	3.224	-0.339
0.312	68760.8	9.973	22230.0	3.224	-0.332
0.366	69092.2	10.021	22236.5	3.225	-0.317
0.428	69521.6	10.083	22248.3	3.227	-0.297
0.495	69708.4	10.110	22257.6	3.228	-0.289
0.553	70061.4	10.161	22270.4	3.230	-0.273
0.610	70309.6	10.197	22287.3	3.232	-0.262
0.688	70843.3	10.275	22319.0	3.237	-0.237
0.762	71505.1	10.371	22354.5	3.242	-0.207
0.833	71688.7	10.397	22392.9	3.248	-0.199
0.914	72608.8	10.531	22437.4	3.254	-0.157
0.991	74214.9	10.764	22482.6	3.261	-0.086
FACE					
0.022	82102.4	11.908	22254.2	3.228	0.268
0.069	80246.4	11.638	22244.1	3.226	0.185
0.114	79874.6	11.584	22236.9	3.225	0.168
0.161	79548.8	11.537	22228.8	3.224	0.153
0.210	78749.5	11.421	22228.4	3.224	0.117
0.252	78917.4	11.446	22225.9	3.223	0.125
0.300	78789.7	11.427	22222.2	3.223	0.119
0.394	78366.1	11.366	22232.3	3.224	0.100
0.491	78030.7	11.317	22245.4	3.226	0.085
0.591	77425.3	11.229	22275.2	3.231	0.058
0.659	77226.9	11.200	22293.6	3.233	0.049
0.724	77014.6	11.170	22321.5	3.237	0.039
0.789	76893.4	11.152	22347.5	3.241	0.034
0.857	76975.6	11.164	22390.4	3.247	0.037
0.923	77248.6	11.204	22429.9	3.253	0.049
0.985	75461.7	10.944	22469.5	3.259	-0.030

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7    MACH NO: 0.50    PDV. RATIO: 3.079

POWER COEFF: 0.649    RECORD NO: 109.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 109.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	76390.0 PA	11.079 PSI
AIR DENSITY:	0.9572 KG/M3	0.05976 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.13 M/S	548.35 FT/S

## PROPFAN:

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RADIAL STATION:	7	
ROTOR SPEED (RPM):	1191.0	
ADVANCE RATIO:	3.079	
POWER COEFFICIENT:	0.649	
BLADE ANGLE (@ X=41" STA):	58.1 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3672 M	53.83 IN.
RADIUS RATIO (@ MID CHORD):	0.862	
REL MACH NO. (@ MID CHORD):	0.666	

RUN DATE:	03-10-1987
RUN TIME:	20:27:08

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 109.0

RADIAL STATION: 7

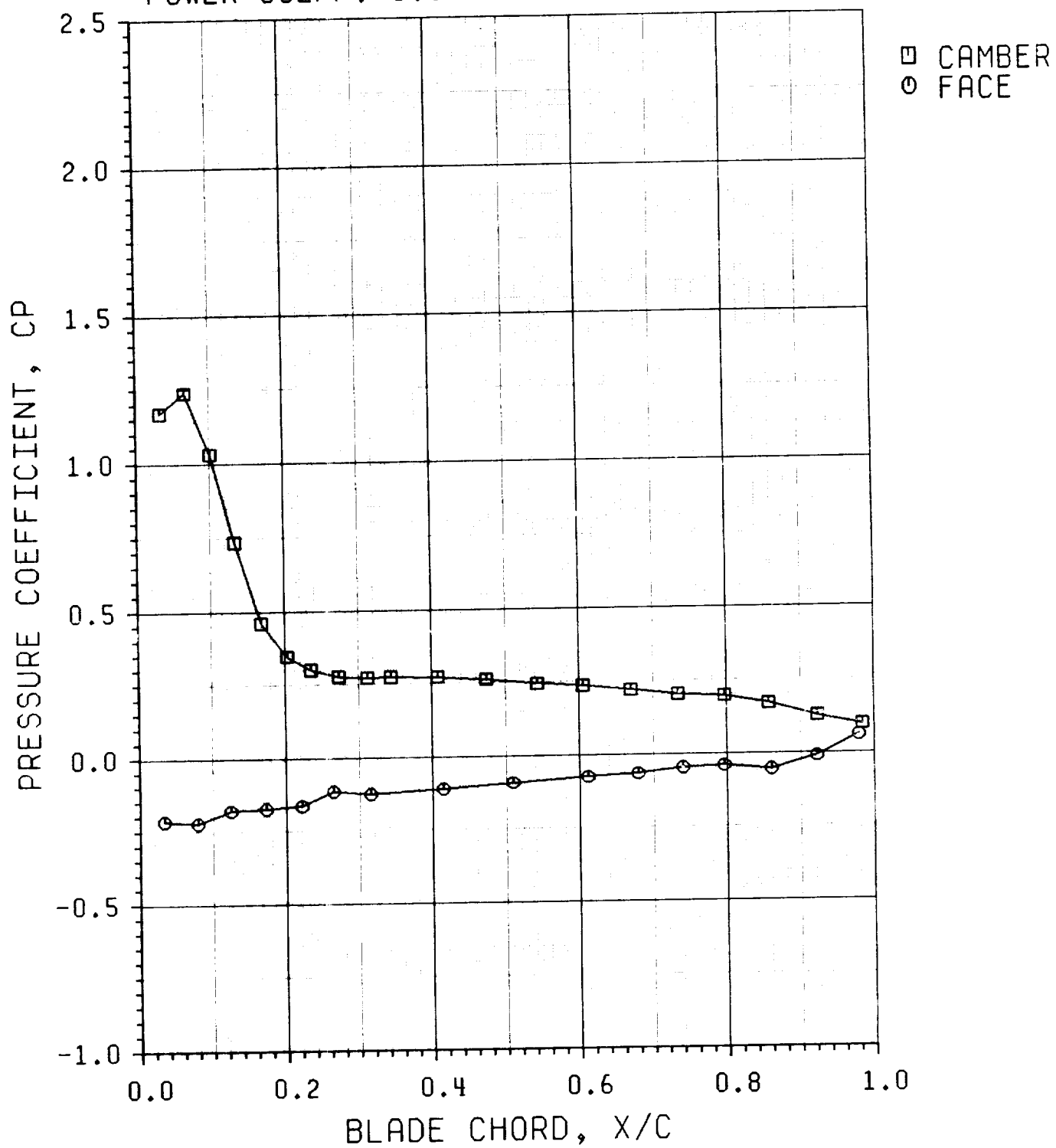
TUNNEL STATIC PRESSURE, PO: 76390.0 PA, 11.079 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	33207.1	4.816	23606.0	3.424	-1.829
0.061	63938.2	9.273	23605.9	3.424	-0.527
0.090	64411.6	9.342	23606.3	3.424	-0.507
0.123	65882.9	9.555	23602.9	3.423	-0.445
0.156	66510.2	9.646	23599.0	3.423	-0.419
0.187	67119.8	9.735	23592.9	3.422	-0.398
0.223	67841.3	9.839	23597.7	3.422	-0.362
0.254	68200.5	9.891	23602.6	3.423	-0.347
0.284	68427.6	9.924	23600.9	3.423	-0.337
0.316	68642.4	9.955	23603.1	3.423	-0.328
0.375	68896.8	9.992	23605.5	3.424	-0.317
0.442	69179.9	10.033	23613.4	3.425	-0.305
0.500	69453.5	10.073	23628.2	3.427	-0.294
0.562	69885.2	10.136	23643.2	3.429	-0.275
0.621	70275.0	10.192	23655.3	3.431	-0.259
0.702	70920.6	10.286	23687.9	3.436	-0.231
0.769	71492.2	10.369	23708.4	3.438	-0.207
0.846	71890.7	10.426	23737.5	3.443	-0.190
0.924	73371.0	10.641	23774.1	3.448	-0.127
0.992	74674.2	10.830	23805.9	3.453	-0.072
FACE					
0.027	83202.4	12.067	23602.2	3.423	0.289
0.074	81531.2	11.825	23602.4	3.423	0.218
0.120	80682.9	11.702	23590.4	3.421	0.182
0.166	80152.7	11.625	23596.0	3.422	0.159
0.213	79761.6	11.568	23588.8	3.420	0.143
0.258	79719.1	11.562	23588.3	3.421	0.141
0.305	78657.1	11.408	23590.3	3.421	0.096
0.402	78996.8	11.457	23598.7	3.423	0.110
0.497	78431.3	11.375	23616.2	3.425	0.086
0.600	77929.1	11.302	23634.0	3.428	0.065
0.660	77920.1	11.301	23648.4	3.430	0.065
0.727	77733.0	11.274	23673.7	3.433	0.057
0.793	77145.9	11.189	23701.9	3.438	0.032
0.857	77531.6	11.245	23731.9	3.442	0.048
0.925	77524.6	11.244	23763.9	3.447	0.048
0.983	74926.5	10.867	23797.2	3.451	-0.061

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.50    ADV. RATIO: 3.078

POWER COEFF: 0.651    RECORD NO: 176.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 176.0

WIND TUNNEL:

STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	76570.0 PA	11.105 PSI
AIR DENSITY:	0.9629 KG/M3	0.06011 LBF/FT3
SPEED OF SOUND:	333.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	166.83 M/S	547.86 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1189.0	
ADVANCE RATIO:	3.078	
POWER COEFFICIENT:	0.651	
BLADE ANGLE (@ X=41" STA):	57.6 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3675 M	53.84 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	0.681	

RUN DATE:	03-12-1987
RUN TIME:	21:02:42

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 176.0

RADIAL STATION: 8

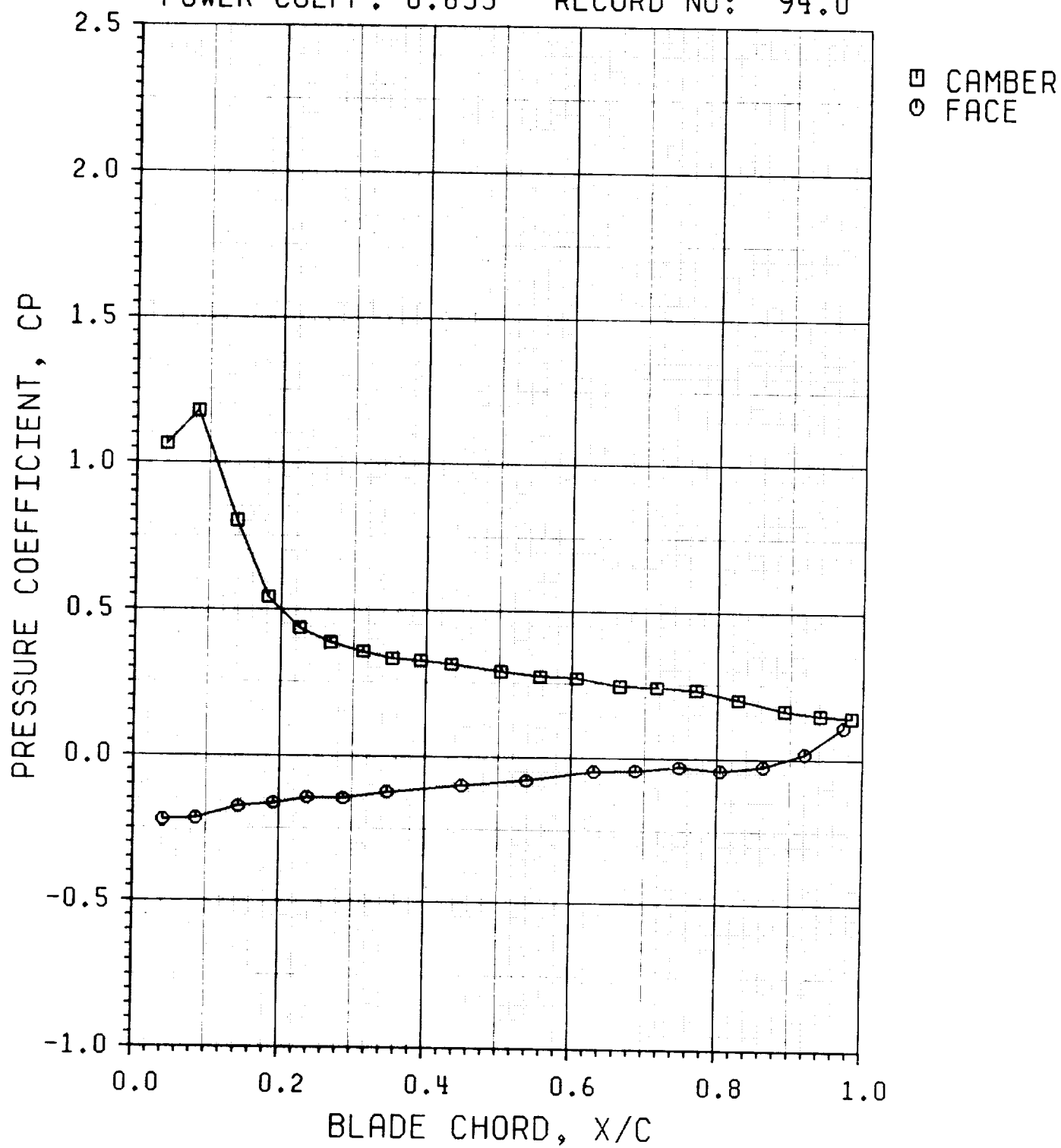
TUNNEL STATIC PRESSURE, PO: 76570.0 PA, 11.105 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	47578.6	6.900	24770.9	3.593	-1.170
0.067	45878.7	6.653	24769.0	3.592	-1.239
0.101	51047.1	7.403	24766.4	3.592	-1.031
0.133	58378.1	8.466	24765.6	3.592	-0.735
0.168	65184.9	9.454	24771.8	3.593	-0.460
0.203	67996.6	9.862	24767.4	3.592	-0.346
0.235	69137.9	10.027	24764.6	3.592	-0.300
0.273	69743.8	10.115	24771.3	3.593	-0.276
0.312	69843.7	10.130	24775.6	3.593	-0.271
0.344	69837.1	10.129	24777.0	3.593	-0.272
0.408	69852.0	10.131	24784.6	3.595	-0.271
0.474	70106.0	10.168	24791.1	3.596	-0.261
0.543	70520.9	10.228	24798.6	3.597	-0.244
0.605	70745.2	10.260	24816.2	3.599	-0.235
0.670	71138.7	10.317	24829.4	3.601	-0.219
0.734	71530.5	10.374	24842.9	3.603	-0.203
0.797	71689.2	10.397	24867.0	3.607	-0.196
0.857	72370.6	10.496	24876.1	3.608	-0.169
0.923	73433.8	10.650	24907.4	3.612	-0.126
0.984	74167.8	10.757	24920.6	3.614	-0.096
FACE					
0.033	81884.7	11.876	24762.3	3.591	0.215
0.079	82088.9	11.906	24758.9	3.591	0.223
0.124	81044.1	11.754	24761.6	3.591	0.181
0.172	80909.4	11.735	24755.3	3.590	0.175
0.221	80671.6	11.700	24749.6	3.590	0.166
0.264	79475.9	11.527	24753.3	3.590	0.117
0.315	79784.2	11.564	24755.7	3.590	0.128
0.414	79336.4	11.506	24765.4	3.592	0.112
0.509	78892.6	11.442	24777.1	3.593	0.094
0.611	78465.9	11.380	24797.9	3.596	0.076
0.679	78198.4	11.341	24810.1	3.598	0.066
0.740	77772.9	11.280	24824.6	3.600	0.048
0.796	77588.7	11.253	24840.3	3.603	0.041
0.860	77945.7	11.305	24860.6	3.606	0.055
0.922	76847.8	11.145	24891.8	3.610	0.011
0.979	75090.0	10.891	24913.0	3.613	-0.059

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.50 ADV. RATIO: 3.084

POWER COEFF: 0.633 RECORD NO: 94.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 94.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	76220.0 PA	11.054 PSI
AIR DENSITY:	0.9349 KG/M3	0.05836 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.92 M/S	554.24 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1202.0	
ADVANCE RATIO:	3.084	
POWER COEFFICIENT:	0.633	
BLADE ANGLE (@ X=41" STA):	58.1 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3672 M	53.83 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	0.692	

RUN DATE:	03-10-1987
RUN TIME:	15:44:45

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 94.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 76220.0 PA, 11.054 PSI

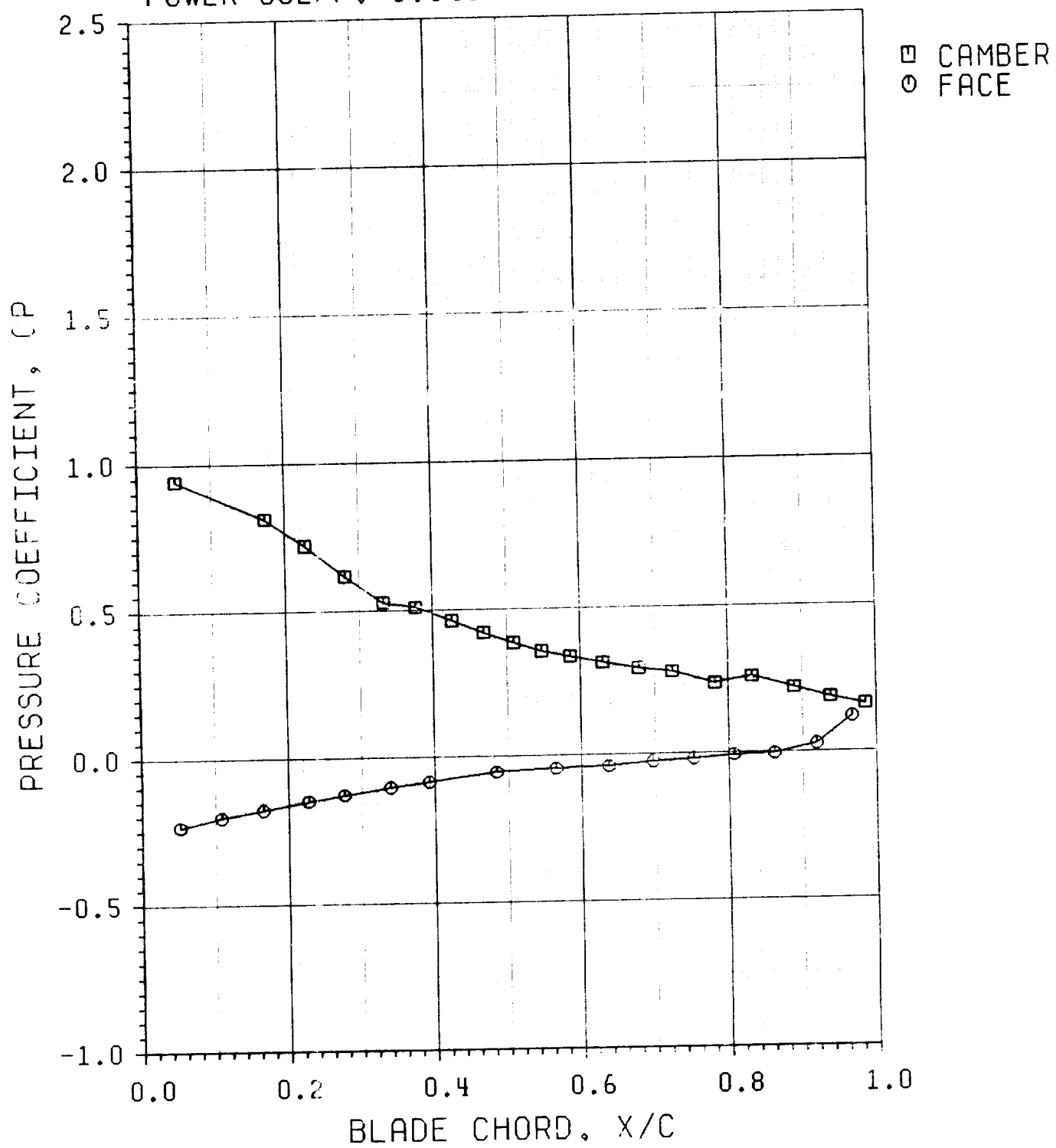
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	49096.6	7.121	25538.7	3.704	-1.062
0.084	46136.7	6.691	25541.5	3.704	-1.178
0.138	55725.0	8.082	25540.2	3.704	-0.802
0.182	62398.2	9.050	25536.9	3.704	-0.541
0.225	65080.1	9.439	25541.0	3.704	-0.436
0.268	66808.4	9.616	25538.4	3.703	-0.388
0.313	67131.3	9.736	25536.3	3.704	-0.356
0.353	67705.2	9.819	25535.6	3.703	-0.333
0.392	67894.5	9.847	25539.2	3.704	-0.326
0.434	68209.4	9.898	25538.4	3.704	-0.314
0.502	68820.0	9.981	25542.5	3.705	-0.290
0.556	69212.7	10.038	25547.2	3.705	-0.274
0.606	69351.4	10.058	25557.3	3.707	-0.269
0.665	69997.2	10.152	25555.6	3.706	-0.243
0.716	70117.3	10.169	25562.9	3.707	-0.239
0.770	70305.6	10.197	25565.1	3.708	-0.231
0.828	71141.9	10.318	25576.6	3.709	-0.199
0.892	72038.5	10.448	25583.0	3.710	-0.163
0.941	72424.6	10.504	25588.8	3.711	-0.148
0.984	72629.4	10.534	25591.4	3.712	-0.140
FACE					
0.041	81920.2	11.881	25533.9	3.703	0.223
0.086	81782.7	11.861	25533.9	3.703	0.218
0.144	80716.0	11.706	25527.6	3.702	0.176
0.192	80398.6	11.660	25525.8	3.702	0.164
0.238	79886.9	11.586	25524.0	3.702	0.144
0.288	79934.9	11.593	25523.4	3.702	0.146
0.348	79394.2	11.515	25524.7	3.702	0.124
0.450	78769.7	11.424	25523.2	3.702	0.100
0.539	78280.8	11.353	25535.1	3.703	0.081
0.631	77424.9	11.229	25537.4	3.704	0.047
0.688	77335.2	11.216	25544.6	3.705	0.044
0.748	77007.1	11.169	25548.3	3.705	0.031
0.804	77303.6	11.212	25561.3	3.707	0.042
0.863	76912.7	11.155	25567.0	3.708	0.027
0.920	75786.7	10.992	25574.3	3.709	-0.017
0.973	73463.5	10.655	25583.0	3.710	-0.108

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 10 MACH NO: 0.50 ADV. RATIO: 3.083

POWER COEFF: 0.646 RECORD NO: 154.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 154.0

WIND TUNNEL:

STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	76440.0 PA	11.086 PSI
AIR DENSITY:	0.9409 KG/M3	0.05874 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.63 M/S	553.26 FT/S

PROPFAN:

RADIAL STATION:	10	
ROTOR SPEED (RPM):	1200.0	
ADVANCE RATIO:	3.083	
POWER COEFFICIENT:	0.646	
BLADE ANGLE (@ X=41" STA):	57.6 DEG.	
BLADE CHORD:	0.2064 M	8.13 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3675 M	53.84 IN.
RADIUS RATIO (@ MID CHORD):	0.965	
REL MACH NO. (@ MID CHORD):	0.701	

RUN DATE:	03-12-1987
RUN TIME:	14:48:48

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 154.0

RADIAL STATION: 10

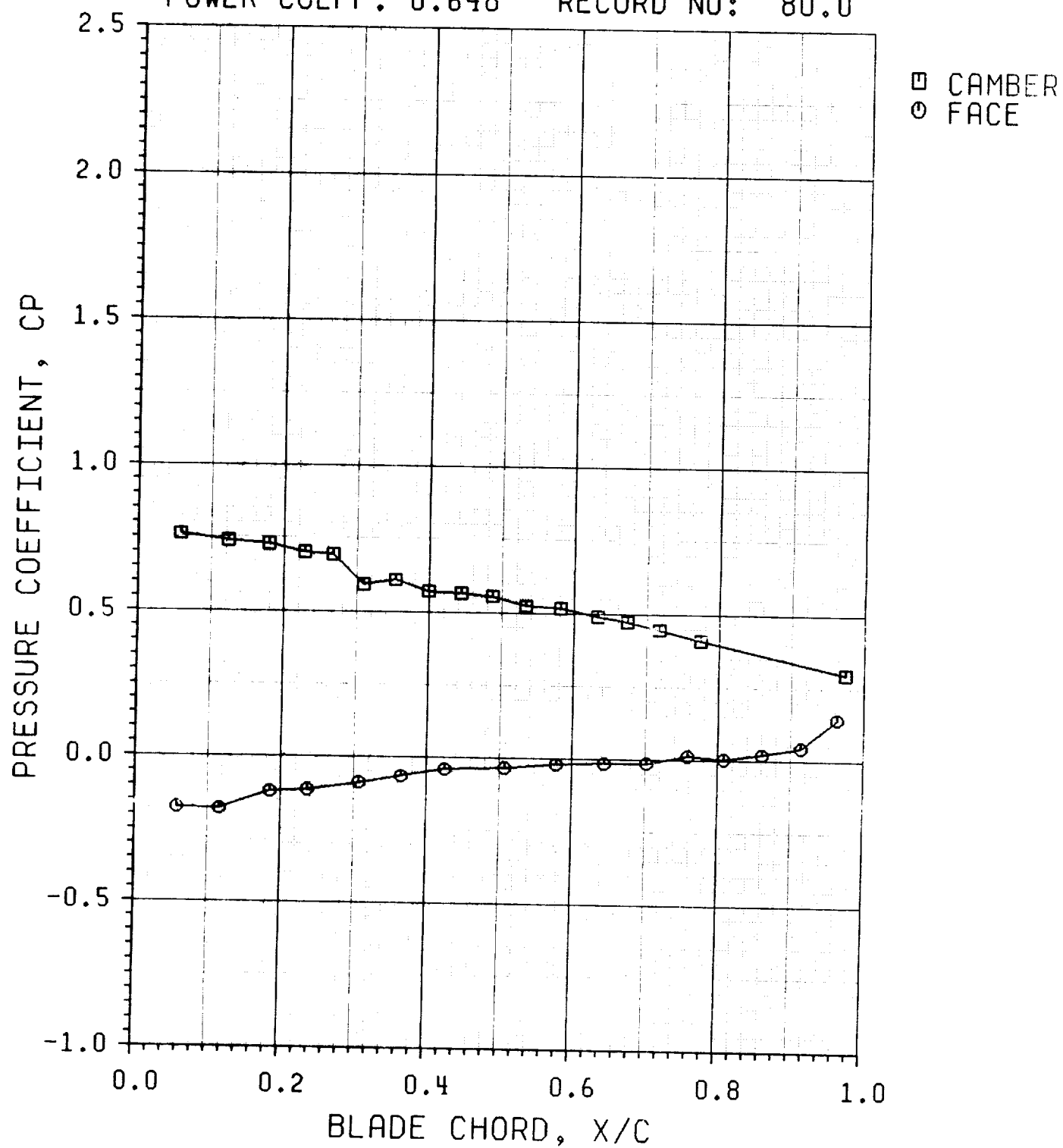
TUNNEL STATIC PRESSURE, PO: 76440.0 PA, 11.086 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.052	51661.4	7.493	26322.6	3.818	-0.941
0.113	*****	*****	26323.8	3.818	*****
0.173	55096.8	7.991	26317.7	3.817	-0.811
0.227	57502.5	8.340	26318.6	3.816	-0.720
0.281	60220.8	8.734	26312.3	3.816	-0.616
0.833	62609.7	9.080	26317.5	3.817	-0.526
0.377	63052.0	9.145	26309.2	3.816	-0.509
0.426	64287.0	9.324	26311.5	3.816	-0.462
0.469	65369.1	9.481	26316.3	3.817	-0.421
0.509	66312.9	9.618	26312.3	3.816	-0.385
0.547	67089.4	9.730	26313.2	3.816	-0.355
0.586	67584.1	9.802	26318.4	3.817	-0.336
0.630	68182.4	9.889	26311.7	3.816	-0.314
0.679	68749.5	9.971	26315.6	3.817	-0.292
0.724	69103.2	10.022	26318.5	3.817	-0.279
0.782	70213.9	10.183	26318.5	3.817	-0.237
0.832	69621.6	10.097	26322.7	3.818	-0.259
0.889	70677.4	10.251	26325.1	3.818	-0.219
0.938	71542.1	10.376	26332.6	3.819	-0.186
0.985	72195.3	10.471	26832.5	3.819	-0.161
FACE					
0.052	82590.2	11.978	26306.4	3.815	0.234
0.108	81778.9	11.861	26303.8	3.815	0.203
0.165	81091.4	11.761	26302.2	3.815	0.177
0.227	80351.6	11.654	26297.6	3.814	0.149
0.276	79831.6	11.578	26292.2	3.813	0.129
0.339	79207.1	11.488	26288.3	3.813	0.105
0.392	78732.8	11.419	26287.0	3.812	0.087
0.484	77918.8	11.301	26289.9	3.813	0.056
0.565	77658.7	11.263	26291.0	3.813	0.046
0.637	77526.2	11.244	26289.1	3.813	0.041
0.697	77186.8	11.195	26292.5	3.813	0.028
0.752	76959.2	11.162	26301.7	3.815	0.020
0.807	76663.7	11.119	26300.1	3.814	0.009
0.862	76605.6	11.110	26307.3	3.815	0.006
0.919	75788.2	10.992	26314.7	3.816	-0.025
0.967	73330.9	10.635	26315.6	3.817	-0.118

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11 MACH NO: 0.50 ADV. RATIO: 3.090

POWER COEFF: 0.648 RECORD NO: 80.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 80.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	76230.0 PA	11.056 PSI
AIR DENSITY:	0.9552 KG/M3	0.05963 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.18 M/S	548.85 FT/S

## PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1187.0	
ADVANCE RATIO:	3.090	
POWER COEFFICIENT:	0.648	
BLADE ANGLE (@ X=41" STA):	58.5 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3670 M	53.82 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.704	

RUN DATE:	03-09-1987
RUN TIME:	22:00:08

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 80.0

RADIAL STATION: 11

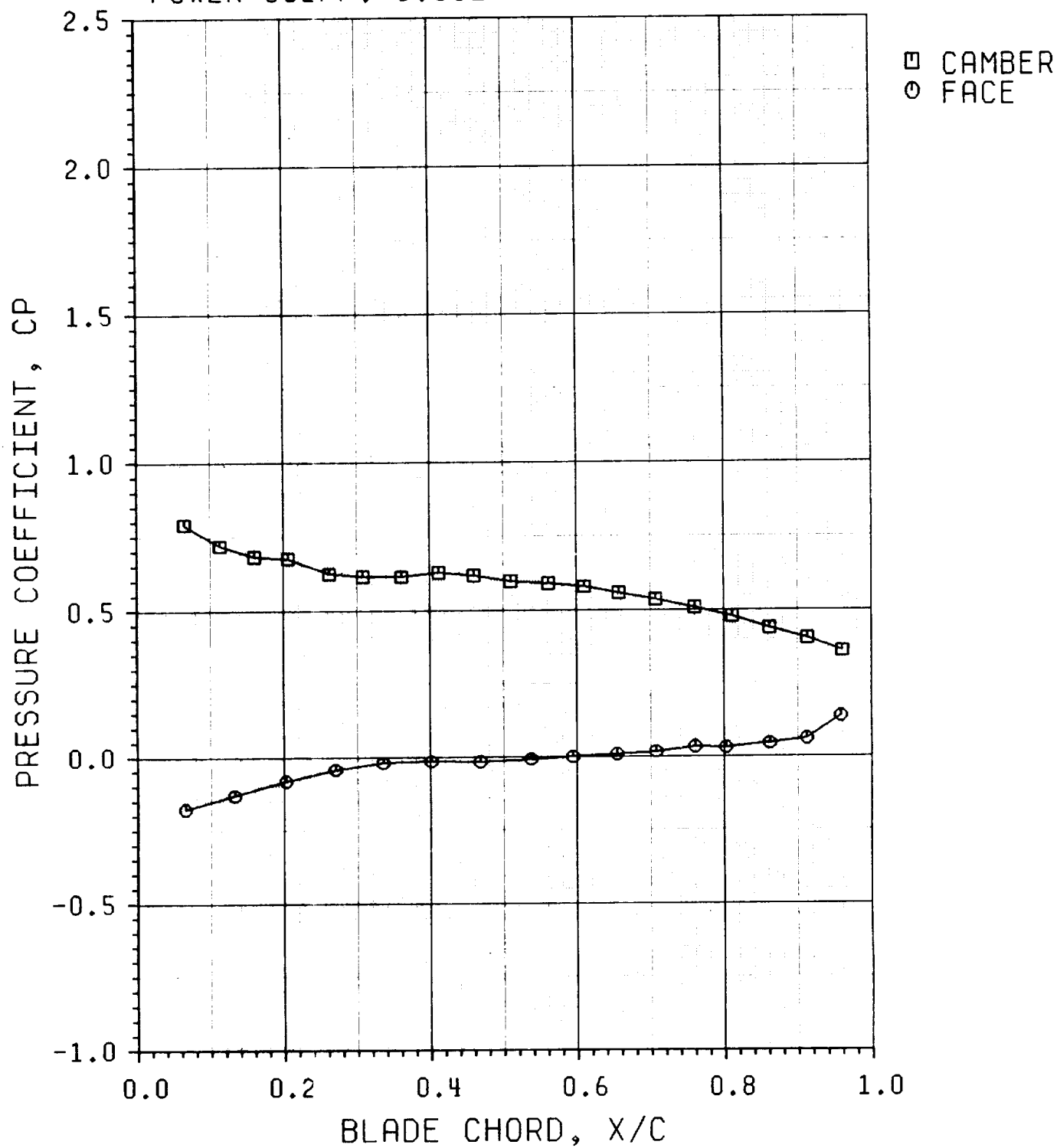
TUNNEL STATIC PRESSURE, PO: 76230.0 PA, 11.056 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	56188.5	8.142	26468.4	3.839	-0.759
0.123	56724.6	8.227	26474.4	3.840	-0.787
0.179	56947.1	8.259	26476.2	3.840	-0.728
0.228	57708.1	8.370	26475.1	3.840	-0.700
0.267	57921.4	8.400	26475.5	3.840	-0.692
0.309	60528.9	8.779	26468.4	3.839	-0.593
0.353	60102.2	8.717	26467.5	3.839	-0.609
0.399	61108.7	8.863	26466.3	3.838	-0.571
0.444	61289.0	8.889	26466.5	3.839	-0.565
0.487	61503.7	8.920	26468.6	3.839	-0.556
0.533	62349.8	9.043	26471.6	3.839	-0.524
0.581	62505.8	9.065	26472.0	3.839	-0.518
0.632	63267.3	9.176	26471.6	3.839	-0.490
0.673	63702.4	9.239	26472.8	3.839	-0.473
0.717	64426.5	9.344	26467.0	3.839	-0.446
0.774	65380.2	9.482	26471.2	3.839	-0.410
0.822	*****	*****	26469.6	3.839	*****
0.875	*****	*****	26468.4	3.839	*****
0.928	*****	*****	26481.1	3.841	*****
0.974	68376.2	9.917	26478.2	3.840	-0.297
FACE					
0.058	80925.1	11.737	26461.8	3.838	0.177
0.116	81022.5	11.751	26461.0	3.838	0.181
0.185	79425.0	11.519	26452.7	3.837	0.121
0.236	79281.0	11.498	26455.9	3.837	0.115
0.307	78571.3	11.395	26450.7	3.836	0.089
0.365	77979.6	11.310	26448.6	3.836	0.066
0.425	77315.2	11.213	26447.5	3.836	0.041
0.507	77144.9	11.189	26441.0	3.835	0.035
0.578	76797.0	11.138	26445.2	3.835	0.021
0.644	76659.7	11.118	26447.2	3.836	0.016
0.702	76591.7	11.108	26444.7	3.835	0.014
0.758	75925.0	11.012	26449.3	3.836	-0.012
0.808	76140.4	11.043	26451.9	3.836	-0.003
0.861	75739.9	10.985	26452.6	3.836	-0.019
0.914	75127.2	10.896	26454.2	3.837	-0.042
0.963	72501.3	10.515	26457.1	3.837	-0.141

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.50    ADV. RATIO: 3.091

POWER COEFF: 0.651    RECORD NO: 125.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 125.0

WIND TUNNEL:

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STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	76400.0 PA	11.080 PSI
AIR DENSITY:	0.9589 KG/M3	0.05955 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	167.43 M/S	549.34 FT/S

PROPFAN:

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RADIAL STATION:	12	
ROTOR SPEED (RPM):	1189.0	
ADVANCE RATIO:	3.091	
POWER COEFFICIENT:	0.651	
BLADE ANGLE (@ X=41" STA):	59.4 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3665 M	53.80 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.708	

RUN DATE:	03-11-1987
RUN TIME:	17:54:59



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 125.0

RADIAL STATION: 12

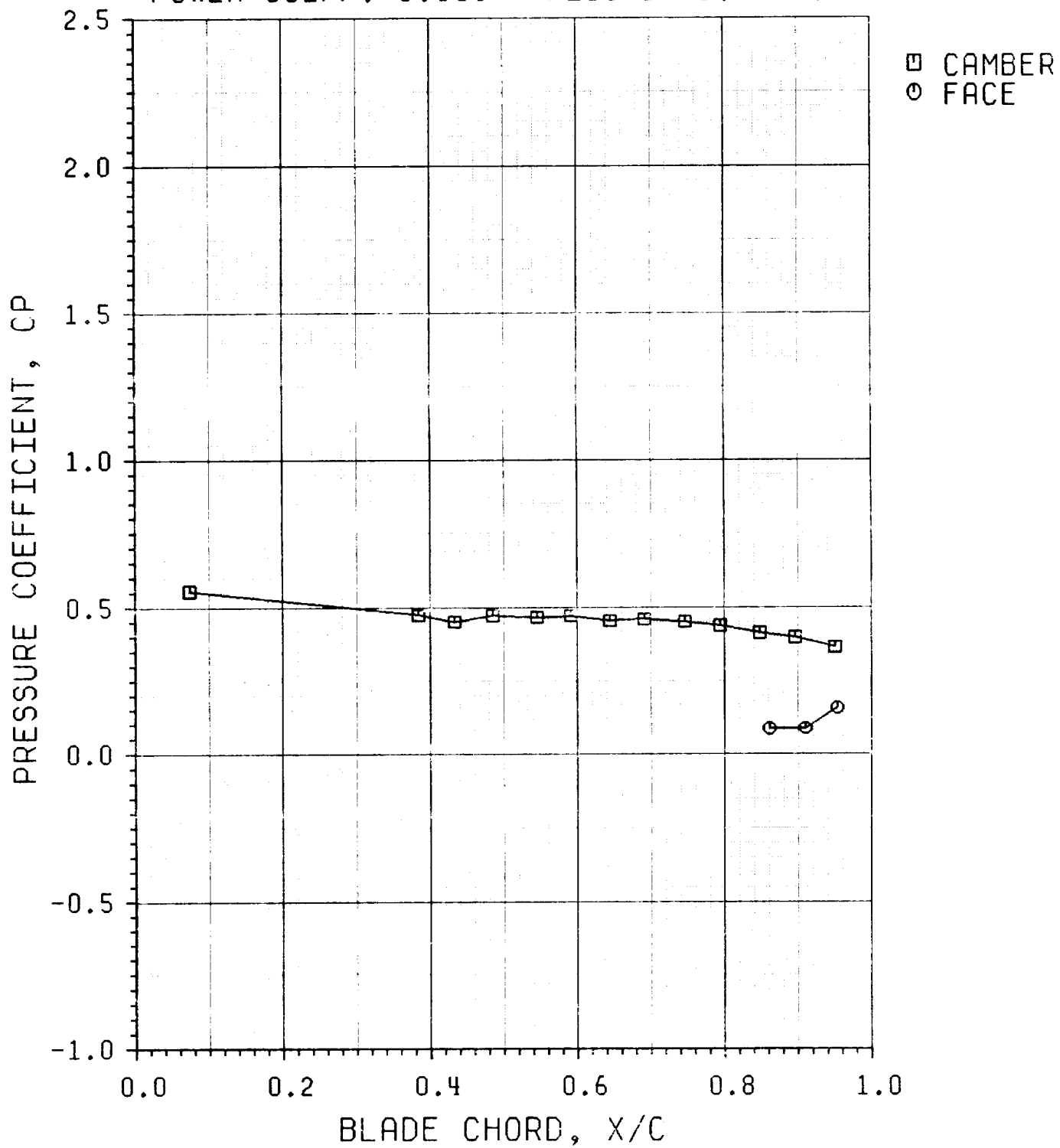
TUNNEL STATIC PRESSURE, P0: 76400.0 PA, 11.080 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	55190.4	8.004	26806.7	3.888	-0.791
0.113	57133.5	8.286	26810.7	3.888	-0.719
0.160	58128.3	8.480	26810.7	3.888	-0.682
0.206	58289.9	8.454	26807.0	3.888	-0.676
0.262	59685.5	8.656	26804.4	3.888	-0.624
0.308	59926.9	8.691	26797.9	3.887	-0.615
0.361	59930.3	8.692	26802.2	3.887	-0.614
0.412	59579.5	8.641	26795.0	3.886	-0.628
0.460	59853.9	8.681	26788.7	3.885	-0.618
0.510	60375.1	8.756	26792.9	3.886	-0.598
0.561	60583.0	8.787	26796.0	3.886	-0.590
0.610	60882.4	8.830	26800.5	3.887	-0.579
0.657	61477.3	8.916	26793.9	3.886	-0.557
0.707	62068.0	9.002	26792.6	3.886	-0.535
0.760	62829.8	9.112	26789.5	3.885	-0.507
0.811	63618.1	9.227	26788.6	3.885	-0.477
0.862	64701.8	9.384	26787.2	3.885	-0.437
0.913	65609.1	9.515	26790.9	3.886	-0.403
0.960	66791.7	9.687	26790.0	3.885	-0.359
FACE					
0.065	81136.5	11.767	26800.2	3.887	0.177
0.132	79911.6	11.590	26800.1	3.887	0.131
0.202	78588.6	11.398	26792.5	3.886	0.082
0.270	77575.2	11.251	26790.1	3.885	0.044
0.335	76962.7	11.162	26785.7	3.885	0.021
0.401	76819.1	11.141	26781.9	3.884	0.016
0.468	76857.2	11.147	26778.9	3.884	0.017
0.537	76638.2	11.115	26773.7	3.883	0.009
0.594	76420.4	11.083	26777.7	3.884	0.001
0.654	76187.1	11.050	26774.5	3.888	-0.008
0.707	75977.9	11.019	26778.9	3.884	-0.016
0.760	75523.2	10.953	26776.2	3.883	-0.033
0.802	75601.1	10.965	26771.8	3.883	-0.030
0.862	75210.7	10.908	26776.0	3.883	-0.044
0.912	74803.4	10.849	26771.3	3.883	-0.060
0.958	72694.9	10.543	26774.7	3.883	-0.138

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13    MACH NO: 0.50    ADV. RATIO: 3.088

POWER COEFF: 0.639    RECORD NO: 70.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 70.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	76070.0 PA	11.033 PSI
AIR DENSITY:	0.9363 KG/M3	0.05846 LBF/FT3
SPEED OF SOUND:	837.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.50	
INFLOW VELOCITY:	168.63 M/S	553.26 FT/S

## PROPFAN:

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RADIAL STATION:	13	
ROTOR SPEED (RPM):	1198.0	
ADVANCE RATIO:	3.088	
POWER COEFFICIENT:	0.639	
BLADE ANGLE (@ X=41" STA):	58.0 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3673 M	53.83 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	0.711	

RUN DATE:	03-09-1987
RUN TIME:	18:17:40

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 70.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 76070.0 PA, 11.033 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	61095.3	8.861	26989.8	3.914	-0.555
0.136	*****	*****	26990.1	3.914	*****
0.189	*****	*****	26976.3	3.912	*****
0.236	*****	*****	26977.0	3.913	*****
0.280	*****	*****	26977.1	3.913	*****
0.830	*****	*****	26968.5	3.911	*****
0.384	63297.9	9.180	26968.7	3.911	-0.474
0.433	63915.6	9.270	26967.4	3.911	-0.451
0.485	63815.0	9.183	26959.6	3.910	-0.473
0.545	63495.4	9.209	26958.3	3.910	-0.466
0.591	68371.8	9.191	26957.9	3.910	-0.471
0.644	63836.9	9.258	26952.4	3.909	-0.454
0.691	63702.1	9.239	26948.9	3.908	-0.459
0.746	63914.6	9.270	26946.7	3.908	-0.451
0.794	64279.8	9.323	26949.2	3.909	-0.437
0.848	64945.0	9.419	26945.9	3.908	-0.413
0.896	65372.6	9.481	26944.3	3.908	-0.397
0.950	66271.1	9.611	26943.7	3.908	-0.364
FACE					
0.074	*****	*****	26977.3	3.913	*****
0.150	*****	*****	26971.1	3.912	*****
0.229	*****	*****	26972.1	3.912	*****
0.302	*****	*****	26960.5	3.910	*****
0.374	*****	*****	26958.5	3.910	*****
0.450	*****	*****	26954.1	3.909	*****
0.519	*****	*****	26946.0	3.908	*****
0.569	*****	*****	26944.3	3.908	*****
0.619	*****	*****	26943.9	3.908	*****
0.669	*****	*****	26944.1	3.908	*****
0.716	*****	*****	26942.6	3.908	*****
0.762	*****	*****	26939.9	3.907	*****
0.810	*****	*****	26934.6	3.906	*****
0.861	73769.9	10.699	26927.9	3.905	-0.085
0.910	73762.1	10.698	26936.9	3.907	-0.086
0.953	71841.9	10.419	26929.7	3.906	-0.157

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B10

(B10.1 through B10.10)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.600 \pm 0.002$

Advance Ratio,  $J = 3.078 \pm 0.007$

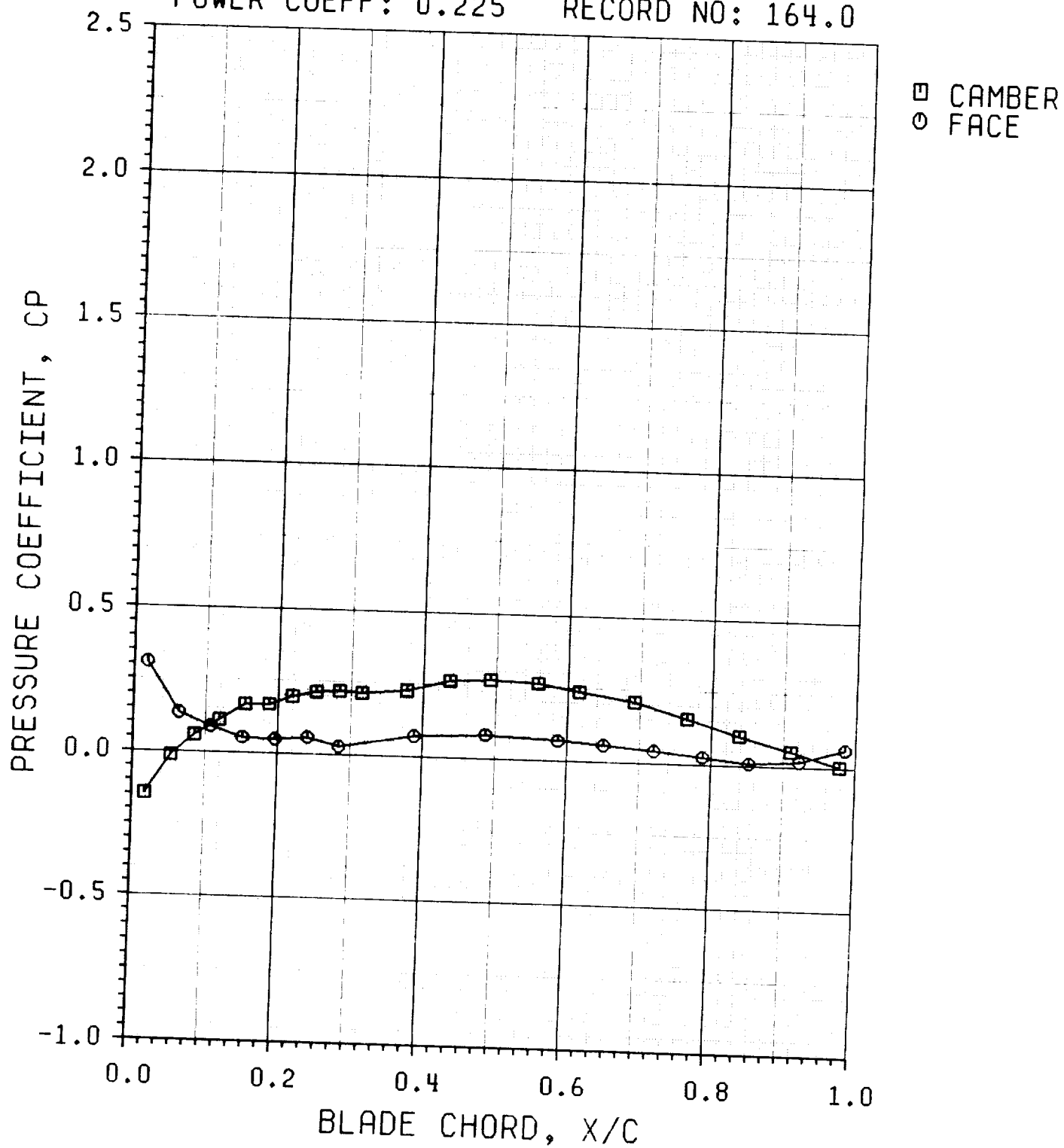
Power Coefficient,  $CP = 0.230 \pm 0.006$

Blade Angle,  $\beta = 54.5 \pm 1.3^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.60 ADV. RATIO: 3.075

POWER COEFF: 0.225 RECORD NO: 164.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 164.0

## WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	72050.0 PA	10.450 PSI
AIR DENSITY:	0.9028 KG/M3	0.05636 LBF/FT3
SPEED OF SOUND:	834.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	200.56 M/S	658.02 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1429.0	
ADVANCE RATIO:	3.075	
POWER COEFFICIENT:	0.225	
BLADE ANGLE (@ X=41" STA):	54.7 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3692 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.310	
REL MACH NO. (@ MID CHORD):	0.629	

RUN DATE:	03-12-1987
RUN TIME:	17:35:18

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 164.0

RADIAL STATION: 1

TUNNEL STATIC PRESSURE, P0: 72050.0 PA, 10.450 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	74954.6	10.871	19563.8	2.837	0.148
0.053	72308.2	10.487	19582.2	2.840	0.013
0.085	70904.2	10.283	19599.0	2.842	-0.058
0.119	69890.8	10.136	19620.4	2.846	-0.110
0.154	68799.6	9.978	19641.9	2.849	-0.165
0.187	68780.5	9.975	19666.1	2.852	-0.166
0.219	68218.7	9.894	19690.1	2.856	-0.195
0.252	67867.8	9.843	19713.3	2.859	-0.212
0.284	67770.1	9.829	19737.3	2.863	-0.217
0.315	67866.8	9.843	19764.6	2.867	-0.212
0.377	67590.6	9.803	19816.4	2.874	-0.225
0.436	66817.1	9.691	19872.6	2.882	-0.263
0.492	66672.3	9.670	19906.8	2.887	-0.270
0.558	66796.7	9.688	19987.7	2.899	-0.263
0.615	67305.0	9.761	20047.4	2.908	-0.237
0.692	67877.9	9.845	20122.0	2.918	-0.207
0.765	68909.6	9.994	20208.0	2.931	-0.155
0.838	70005.4	10.153	20284.5	2.942	-0.101
0.910	70997.4	10.297	20368.8	2.954	-0.052
0.978	72014.1	10.444	20447.0	2.965	-0.002
FACE					
0.018	66026.7	9.576	19573.1	2.839	-0.308
0.063	69434.5	10.070	19621.5	2.846	-0.133
0.107	70319.9	10.199	19656.3	2.851	-0.088
0.151	71054.8	10.305	19687.6	2.855	-0.051
0.196	71116.6	10.314	19721.7	2.860	-0.047
0.241	70944.2	10.289	19754.2	2.865	-0.056
0.284	71487.9	10.368	19783.4	2.869	-0.028
0.388	70663.2	10.248	19863.1	2.881	-0.070
0.487	70441.6	10.216	19946.9	2.893	-0.081
0.587	70676.1	10.250	20034.8	2.906	-0.069
0.650	70912.4	10.285	20088.0	2.913	-0.057
0.720	71203.9	10.327	20153.6	2.923	-0.042
0.788	71522.2	10.373	20224.3	2.933	-0.026
0.852	71880.7	10.425	20292.1	2.943	-0.008
0.922	71687.9	10.397	20369.6	2.954	-0.018
0.985	70780.9	10.266	20445.2	2.965	-0.062

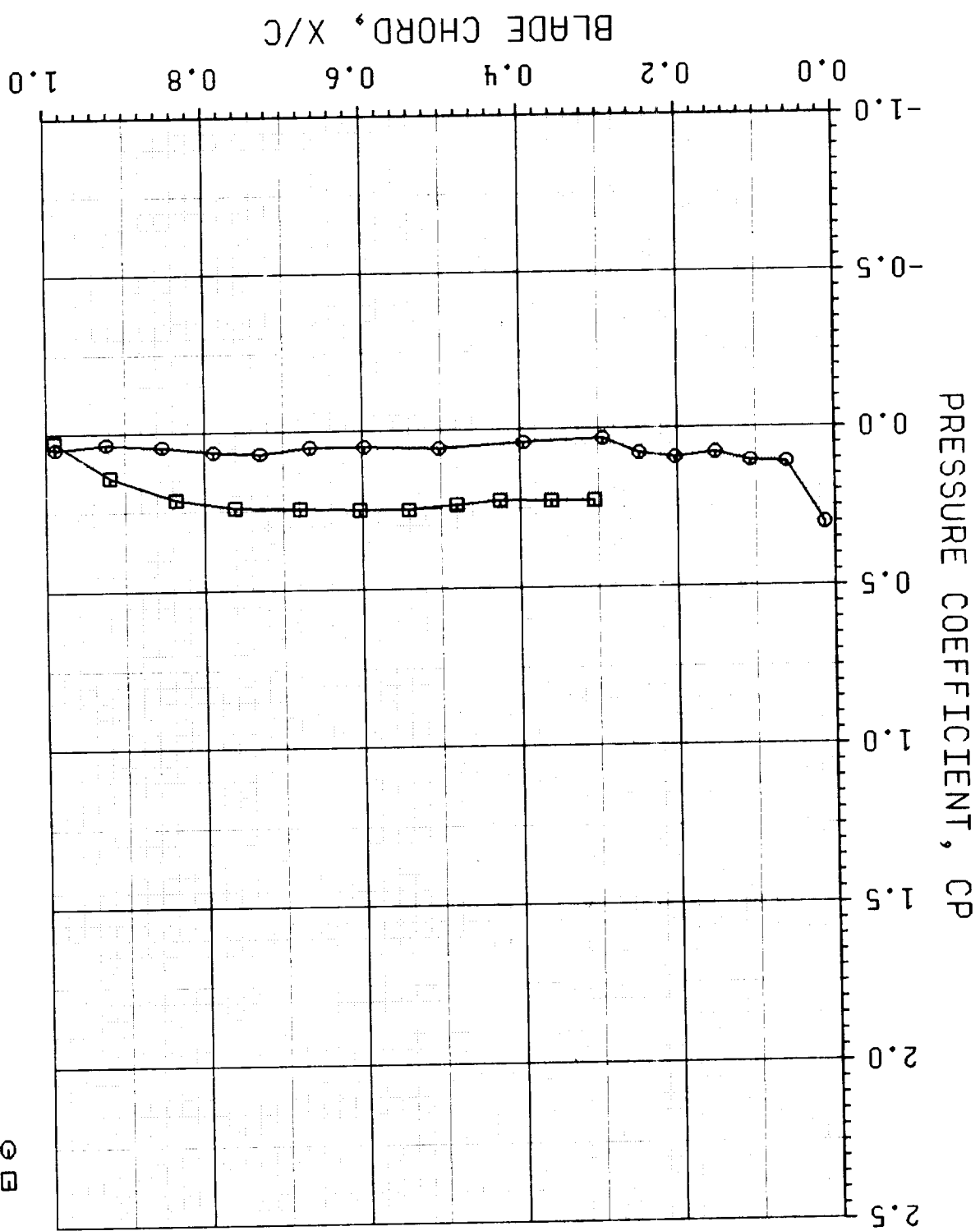
NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 3 MACH NO: 0.60 ADV. RATIO: 3.077

POWER COEFF: 0.226 RECORD NO: 140.0

□ CAMBER  
○ FACE



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 140.0

WIND TUNNEL:

STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	72120.0 PA	10.460 PSI
AIR DENSITY:	0.9135 KG/M3	0.05703 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	199.47 M/S	654.46 FT/S

PROPFAN:

RADIAL STATION:	3	
ROTOR SPEED (RPM):	1421.0	
ADVANCE RATIO:	3.077	
POWER COEFFICIENT:	0.226	
BLADE ANGLE (@ X=41" STA):	55.3 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.569	
REL MACH NO. (@ MID CHORD):	0.694	

RUN DATE:	03-11-1987
RUN TIME:	21:47:25

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 140.0

RADIAL STATION: 3

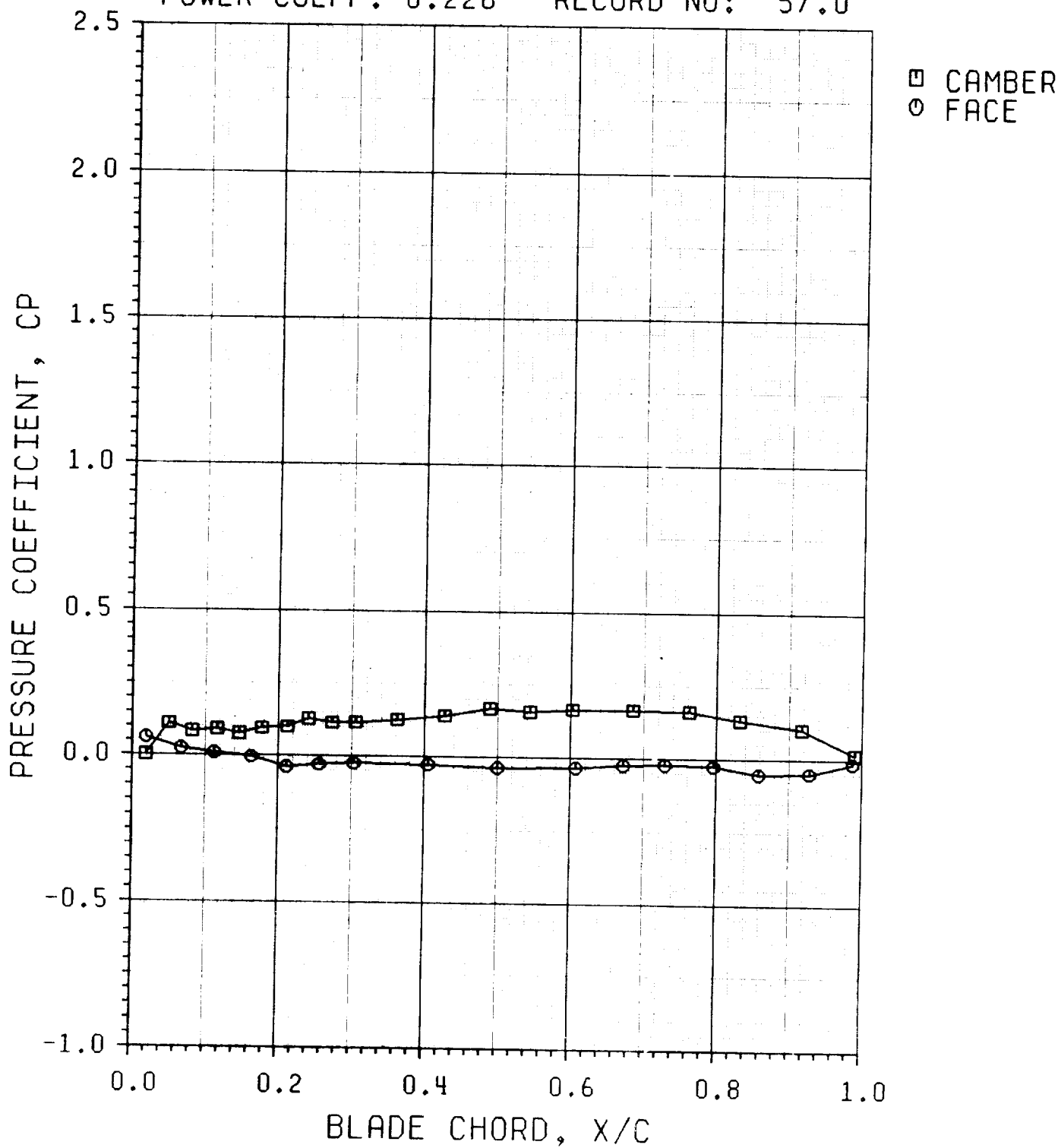
TUNNEL STATIC PRESSURE, PO: 72120.0 PA, 10.460 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	*****	*****	23970.1	3.476	*****
0.046	*****	*****	23973.5	3.477	*****
0.077	*****	*****	23970.2	3.476	*****
0.107	*****	*****	23976.5	3.477	*****
0.139	*****	*****	23978.6	3.478	*****
0.173	*****	*****	23980.9	3.478	*****
0.201	*****	*****	23991.2	3.480	*****
0.238	*****	*****	24000.9	3.481	*****
0.271	*****	*****	24014.6	3.483	*****
0.305	66637.9	9.665	24031.7	3.485	-0.228
0.360	66623.9	9.663	24057.1	3.489	-0.228
0.425	66705.6	9.674	24096.8	3.495	-0.225
0.480	66382.2	9.628	24127.8	3.499	-0.238
0.541	66051.3	9.580	24183.5	3.507	-0.251
0.603	66071.1	9.582	24229.6	3.514	-0.250
0.679	66165.9	9.596	24308.5	3.526	-0.245
0.761	66256.7	9.609	24391.0	3.537	-0.240
0.836	66917.3	9.705	24479.3	3.550	-0.213
0.919	68684.0	9.961	24580.4	3.565	-0.140
0.989	71466.1	10.865	24673.1	3.578	-0.027
FACE					
0.013	64875.8	9.409	23984.9	3.479	-0.302
0.061	69501.2	10.080	23992.1	3.480	-0.109
0.107	69625.0	10.098	23996.3	3.480	-0.104
0.151	70237.4	10.187	24003.5	3.481	-0.078
0.202	69875.8	10.134	24016.1	3.483	-0.093
0.248	70246.2	10.188	24027.9	3.485	-0.078
0.294	71406.4	10.356	24044.2	3.487	-0.030
0.395	71130.1	10.316	24090.0	3.494	-0.041
0.502	70728.1	10.258	24161.1	3.504	-0.058
0.597	70912.1	10.285	24226.3	3.514	-0.050
0.666	70906.1	10.284	24296.4	3.524	-0.050
0.729	70436.2	10.216	24345.6	3.531	-0.069
0.788	70618.3	10.242	24408.9	3.540	-0.062
0.853	71041.9	10.303	24487.9	3.552	-0.044
0.924	71284.6	10.339	24573.6	3.564	-0.034
0.988	70907.7	10.284	24665.4	3.577	-0.049

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.60 ADV. RATIO: 3.071

POWER COEFF: 0.226 RECORD NO: 57.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 57.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	70130.0 PA	10.171 PSI
AIR DENSITY:	0.8694 KG/M3	0.05427 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	201.63 M/S	661.56 FT/S

## PROPFAN:

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RADIAL STATION:	5	
ROTOR SPEED (RPM):	1439.0	
ADVANCE RATIO:	3.071	
POWER COEFFICIENT:	0.226	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.5814 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.739	
REL MACH NO. (@ MID CHORD):	0.752	

RUN DATE:	03-06-1987
RUN TIME:	19:03:49

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 57.0

RADIAL STATION: 5

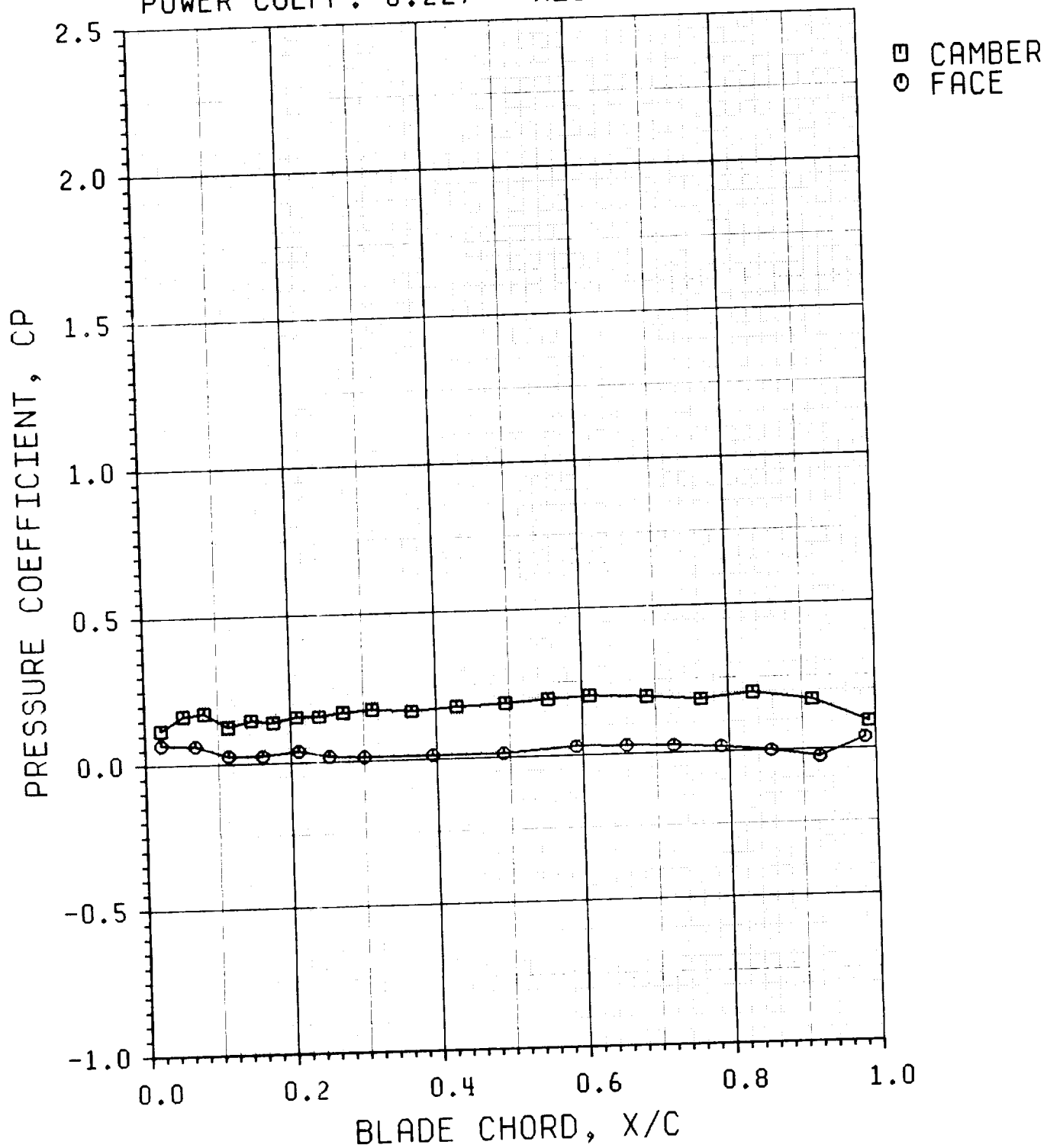
TUNNEL STATIC PRESSURE, PO: 70130.0 PA, 10.171 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	70140.7	10.173	27559.0	3.997	0.000
0.050	67134.6	9.737	27545.2	3.995	-0.109
0.082	67834.2	9.838	27530.1	3.993	-0.083
0.116	67641.7	9.810	27519.7	3.991	-0.090
0.146	68069.4	9.872	27510.7	3.990	-0.075
0.177	67540.2	9.796	27504.9	3.989	-0.094
0.212	67409.4	9.777	27501.0	3.989	-0.099
0.241	66630.7	9.664	27499.4	3.988	-0.127
0.273	66987.2	9.715	27499.0	3.988	-0.114
0.305	66940.6	9.709	27500.0	3.988	-0.116
0.362	66673.1	9.670	27510.7	3.990	-0.126
0.427	66238.7	9.607	27529.6	3.993	-0.141
0.489	65533.5	9.504	27547.6	3.995	-0.167
0.544	65765.6	9.538	27575.1	3.999	-0.158
0.602	65549.3	9.507	27615.6	4.005	-0.166
0.685	65530.9	9.504	27672.4	4.013	-0.166
0.762	65638.4	9.520	27736.3	4.023	-0.162
0.832	66450.2	9.637	27803.5	4.032	-0.132
0.917	67297.1	9.760	27897.5	4.046	-0.102
0.990	69696.6	10.108	27984.2	4.059	-0.015
FACE					
0.019	68472.8	9.931	27574.6	3.999	-0.060
0.067	69491.1	10.078	27552.4	3.996	-0.023
0.112	69914.2	10.140	27530.9	3.993	-0.008
0.163	70294.2	10.195	27522.1	3.992	0.006
0.211	71236.1	10.332	27519.9	3.991	0.040
0.256	70973.1	10.293	27518.7	3.991	0.031
0.303	70837.8	10.274	27518.3	3.991	0.026
0.405	70919.1	10.286	27527.9	3.992	0.029
0.500	71178.6	10.323	27557.0	3.997	0.038
0.607	71092.6	10.311	27620.9	4.006	0.035
0.672	70812.9	10.270	27658.8	4.011	0.025
0.729	70743.5	10.260	27708.2	4.019	0.022
0.796	70846.9	10.275	27763.3	4.027	0.026
0.858	71589.6	10.383	27820.1	4.035	0.052
0.928	71510.2	10.371	27898.6	4.046	0.049
0.987	70524.1	10.228	27973.0	4.057	0.014

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.60 ADV. RATIO: 3.074

POWER COEFF: 0.227 RECORD NO: 191.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST ---

OPERATING PARAMETERS FOR RECORD NUMBER: 191.0

## WIND TUNNEL: ---

STATIC TEMPERATURE:	280.0 K	44.3 F
STATIC PRESSURE:	71830.0 PA	10.418 PSI
AIR DENSITY:	0.8936 KG/M3	0.05579 LBF/FT3
SPEED OF SOUND:	385.46 M/S	1100.64 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	201.28 M/S	660.39 FT/S

## PROPFAN: ---

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1434.0	
ADVANCE RATIO:	3.074	
POWER COEFFICIENT:	0.227	
BLADE ANGLE (@ X=41" STA):	53.2 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.8700 M	53.94 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.777	

RUN DATE:	03-13-1987
RUN TIME:	14:51:53



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 191.0

RADIAL STATION: 6

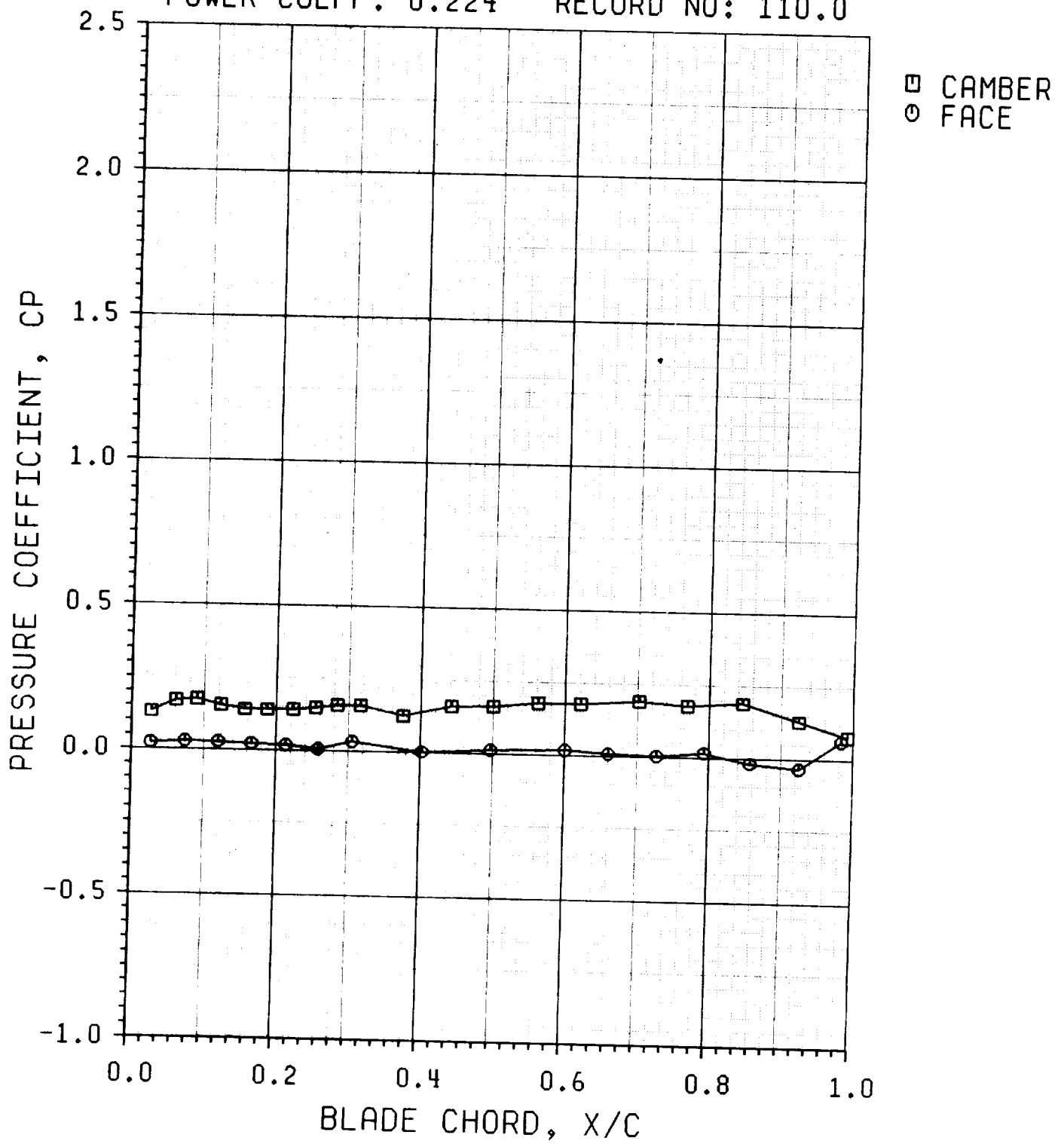
TUNNEL STATIC PRESSURE, PO: 71830.0 PA, 10.418 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	68286.3	9.904	30198.4	4.380	-0.117
0.053	66847.4	9.695	30186.7	4.378	-0.165
0.082	66602.8	9.660	30177.5	4.377	-0.173
0.114	68054.1	9.870	30177.2	4.377	-0.125
0.146	67437.4	9.781	30172.0	4.376	-0.146
0.176	67676.1	9.815	30156.9	4.374	-0.188
0.208	67184.8	9.744	30154.9	4.373	-0.154
0.239	67196.2	9.746	30158.3	4.374	-0.154
0.272	66860.2	9.697	30156.6	4.374	-0.165
0.312	66653.2	9.667	30161.9	4.374	-0.172
0.366	66874.6	9.699	30172.0	4.376	-0.164
0.428	66508.4	9.646	30190.6	4.379	-0.176
0.495	66295.6	9.615	30207.6	4.381	-0.183
0.553	65989.7	9.571	30229.9	4.384	-0.193
0.610	65787.6	9.541	30258.8	4.389	-0.200
0.688	65975.0	9.569	30311.7	4.396	-0.193
0.762	66405.9	9.631	30371.2	4.405	-0.179
0.833	65802.4	9.543	30435.7	4.414	-0.198
0.914	66675.7	9.670	30512.2	4.425	-0.169
0.991	69046.2	10.014	30591.0	4.437	-0.091
FACE					
0.022	69811.9	10.125	30206.5	4.381	-0.067
0.069	69925.5	10.141	30189.1	4.378	-0.063
0.114	71030.8	10.302	30176.5	4.377	-0.026
0.161	71115.6	10.314	30163.2	4.375	-0.024
0.210	70705.7	10.255	30161.1	4.374	-0.037
0.252	71288.9	10.339	30157.1	4.374	-0.018
0.300	71479.6	10.367	30152.1	4.373	-0.012
0.394	71471.1	10.366	30168.1	4.375	-0.012
0.491	71469.7	10.365	30191.3	4.379	-0.012
0.591	70963.6	10.292	30240.6	4.386	-0.029
0.659	71012.4	10.299	30273.6	4.391	-0.027
0.724	71099.7	10.312	30320.4	4.397	-0.024
0.789	71333.2	10.346	30366.3	4.404	-0.016
0.857	71870.0	10.423	30436.9	4.414	0.001
0.923	72617.6	10.532	30504.2	4.424	0.026
0.985	70734.2	10.259	30572.3	4.434	-0.036

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.60 ADV. RATIO: 3.071

POWER COEFF: 0.224 RECORD NO: 110.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 110.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	72000.0 PA	10.442 PSI
AIR DENSITY:	0.9120 KG/M3	0.05694 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	199.47 M/S	654.46 FT/S

## PROPFAN:

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RADIAL STATION:	7	
ROTOR SPEED (RPM):	1424.0	
ADVANCE RATIO:	3.071	
POWER COEFFICIENT:	0.224	
BLADE ANGLE (@ X=41" STA):	55.7 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	0.800	

RUN DATE:	03-10-1987
RUN TIME:	20:41:07

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 110.0

RADIAL STATION: 7

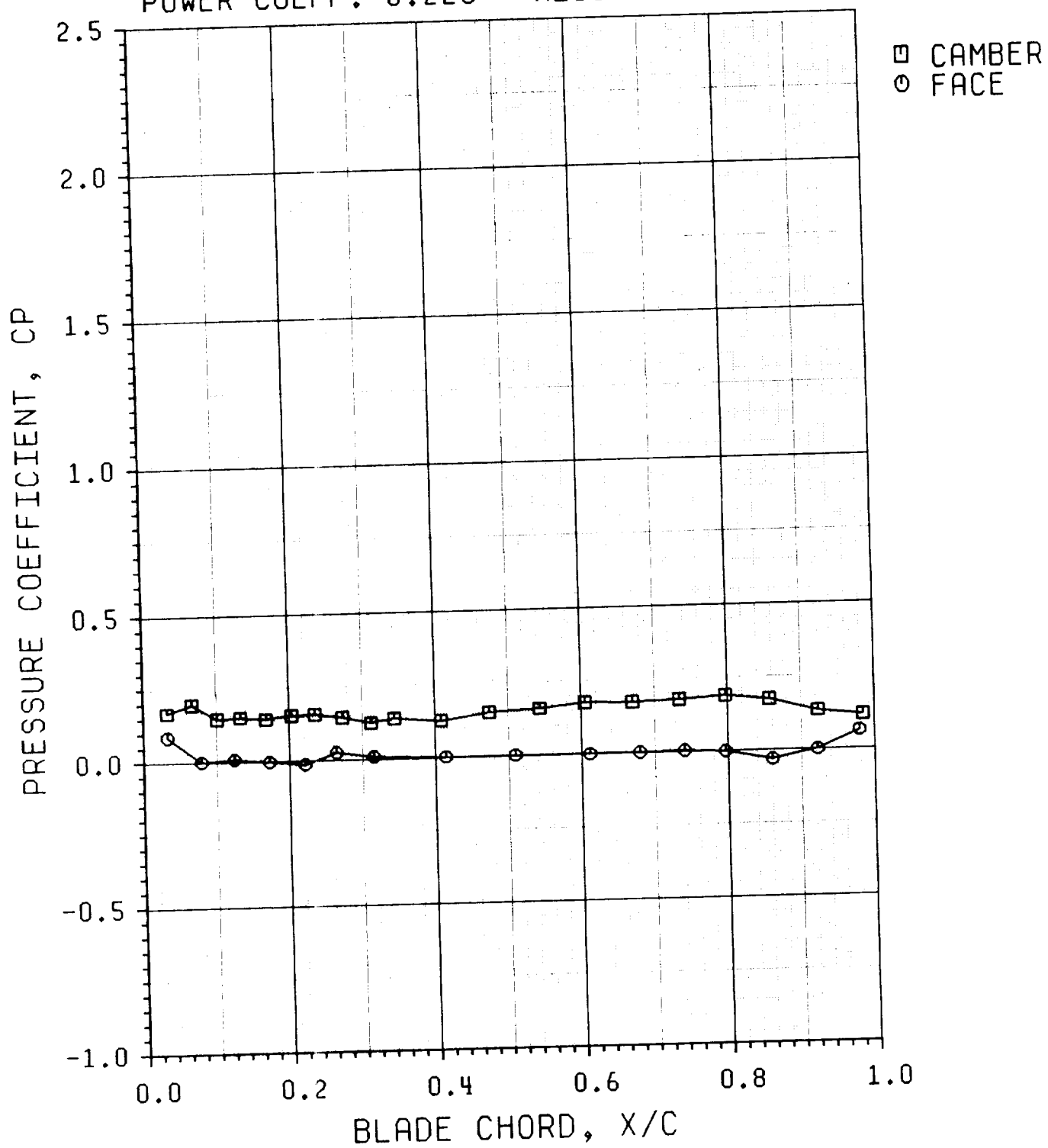
TUNNEL STATIC PRESSURE, PO: 72000.0 PA, 10.442 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	67845.6	9.840	32088.1	4.654	-0.129
0.061	66681.7	9.664	32087.6	4.654	-0.167
0.090	66473.1	9.641	32088.0	4.654	-0.172
0.123	67138.2	9.737	32083.3	4.653	-0.152
0.156	67526.7	9.794	32078.2	4.652	-0.139
0.187	67535.9	9.795	32070.1	4.651	-0.139
0.223	67517.2	9.792	32077.0	4.652	-0.140
0.254	67281.4	9.758	32084.2	4.653	-0.147
0.284	66978.6	9.714	32082.6	4.653	-0.157
0.316	66940.2	9.709	32086.3	4.654	-0.158
0.375	68007.8	9.863	32091.4	4.654	-0.124
0.442	66856.9	9.696	82104.7	4.656	-0.160
0.500	66786.0	9.686	32127.6	4.660	-0.162
0.562	66272.0	9.612	32151.3	4.663	-0.178
0.621	66315.6	9.618	32171.3	4.666	-0.177
0.702	65875.5	9.554	32221.5	4.673	-0.190
0.769	66249.7	9.608	32254.7	4.678	-0.178
0.846	65898.0	9.557	32301.1	4.685	-0.189
0.924	67823.6	9.837	32358.3	4.693	-0.129
0.992	69468.2	10.075	32408.8	4.700	-0.078
FACE					
0.027	71321.9	10.344	32083.1	4.653	-0.021
0.074	71129.4	10.316	32083.0	4.653	-0.027
0.120	71163.4	10.321	32066.7	4.651	-0.026
0.166	71388.4	10.346	32074.4	4.652	-0.021
0.213	71439.5	10.361	32058.3	4.649	-0.017
0.258	71848.0	10.420	32065.2	4.651	-0.005
0.305	70939.9	10.289	32069.0	4.651	-0.033
0.402	71958.2	10.436	32083.4	4.653	-0.001
0.497	71626.2	10.388	32111.4	4.657	-0.012
0.600	71429.9	10.360	32141.3	4.662	-0.018
0.660	71780.0	10.410	32164.9	4.665	-0.007
0.727	71928.4	10.432	32204.4	4.671	-0.002
0.793	71485.7	10.368	32248.2	4.677	-0.016
0.857	72597.7	10.529	32294.8	4.684	0.019
0.925	73118.9	10.605	32345.2	4.691	0.035
0.983	69977.6	10.149	32396.7	4.699	-0.062

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8 MACH NO: 0.60 ADV. RATIO: 3.080

POWER COEFF: 0.226 RECORD NO: 177.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 177.0

WIND TUNNEL:

STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	72150.0 PA	10.464 PSI
AIR DENSITY:	0.9139 KG/M3	0.05706 LBF/FT3
SPEED OF SOUND:	832.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	199.47 M/S	654.46 FT/S

PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1419.0	
ADVANCE RATIO:	8.080	
POWER COEFFICIENT:	0.226	
BLADE ANGLE (@ X=41" STA):	54.6 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3692 M	53.91 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	0.817	

RUN DATE:	03-12-1987
RUN TIME:	21:12:54

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 177.0

RADIAL STATION: 8

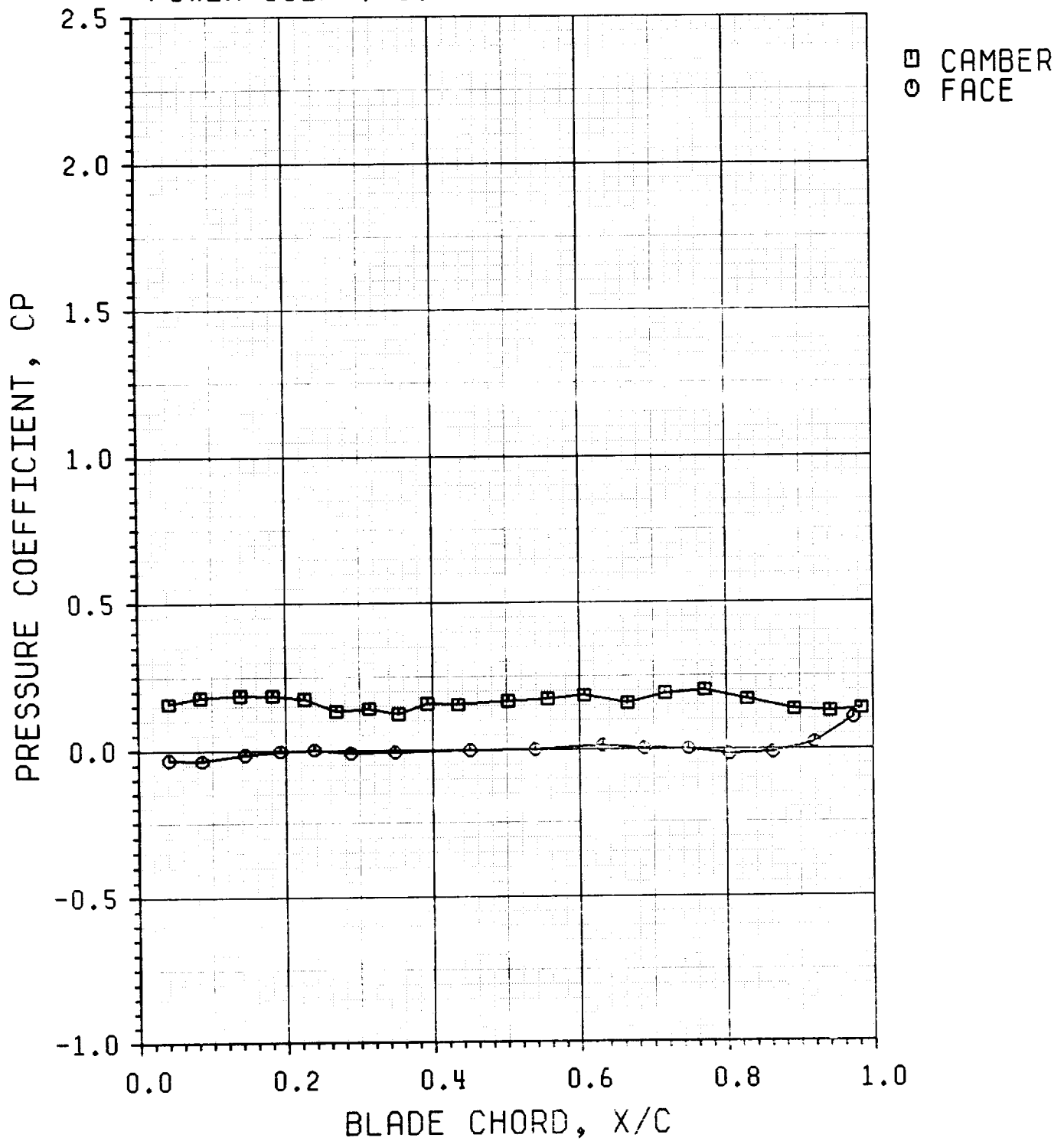
TUNNEL STATIC PRESSURE, P0: 72150.0 PA, 10.464 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	66484.1	9.642	33553.7	4.866	-0.169
0.067	65552.3	9.507	33551.8	4.866	-0.197
0.101	67196.2	9.746	33548.9	4.866	-0.148
0.133	67085.1	9.730	33548.7	4.866	-0.151
0.168	67324.2	9.764	33558.0	4.867	-0.144
0.203	66935.7	9.708	33553.2	4.866	-0.155
0.235	66856.6	9.696	33550.6	4.866	-0.158
0.273	67284.4	9.758	33561.0	4.867	-0.145
0.312	67991.2	9.861	33568.6	4.869	-0.124
0.344	67533.6	9.795	33572.0	4.869	-0.138
0.408	67921.8	9.851	33585.6	4.871	-0.126
0.474	67114.3	9.734	33598.4	4.873	-0.150
0.543	66820.6	9.691	33613.1	4.875	-0.159
0.605	66265.9	9.611	33641.4	4.879	-0.175
0.670	66355.5	9.624	33664.6	4.882	-0.172
0.734	66180.8	9.598	33688.3	4.886	-0.177
0.797	65814.2	9.545	33726.9	4.891	-0.188
0.857	66309.9	9.617	33745.2	4.894	-0.173
0.923	67707.7	9.820	33794.4	4.901	-0.131
0.984	68262.0	9.900	33819.1	4.905	-0.115
FACE					
0.033	69246.1	10.043	33542.4	4.865	-0.087
0.079	72159.9	10.466	33538.6	4.864	0.000
0.124	71891.5	10.427	33543.2	4.865	-0.008
0.172	72234.2	10.476	33536.1	4.864	0.003
0.221	72620.4	10.532	33530.0	4.863	0.014
0.264	71313.6	10.343	33536.7	4.864	-0.025
0.315	71881.9	10.425	33542.1	4.865	-0.008
0.414	72121.9	10.460	33560.3	4.867	-0.001
0.509	72100.9	10.457	33581.9	4.870	-0.001
0.611	72170.5	10.467	33617.4	4.876	0.001
0.679	72158.4	10.465	33639.5	4.879	0.000
0.740	72038.1	10.448	33664.4	4.882	-0.003
0.796	72235.5	10.477	33690.9	4.886	0.003
0.860	73227.3	10.620	33724.8	4.891	0.032
0.922	72190.1	10.470	33773.7	4.898	0.001
0.979	70101.7	10.167	33808.8	4.903	-0.061

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.60 ADV. RATIO: 3.084

POWER COEFF: 0.227 RECORD NO: 95.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 95.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	71860.0 PA	10.422 PSI
AIR DENSITY:	0.8908 KG/M3	0.05561 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	201.63 M/S	661.56 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1433.0	
ADVANCE RATIO:	3.084	
POWER COEFFICIENT:	0.227	
BLADE ANGLE (@ X=41" STA):	55.6 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	0.830	

RUN DATE:	03-10-1987
RUN TIME:	15:53:43

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 95.0

RADIAL STATION: 9

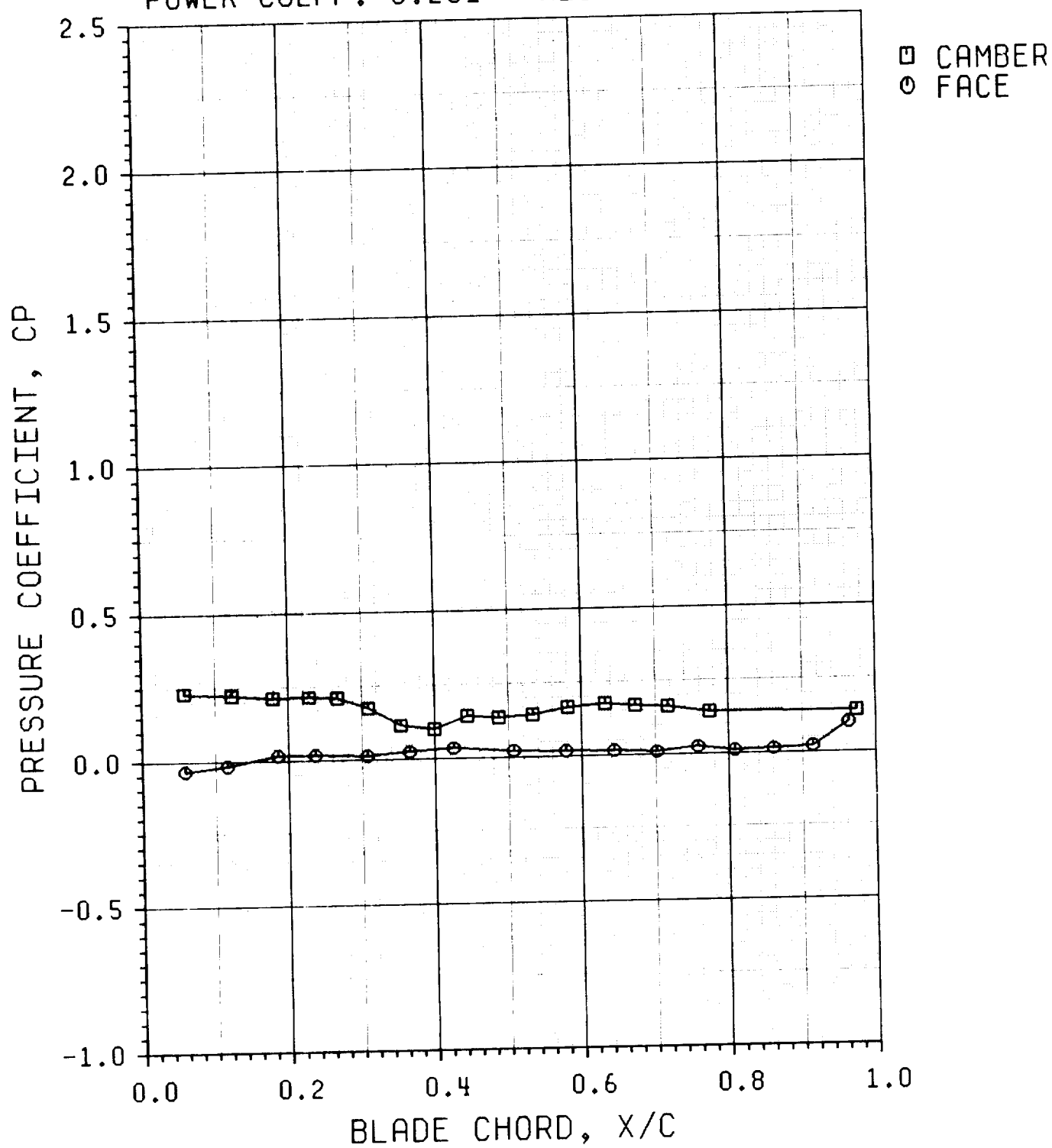
TUNNEL STATIC PRESSURE, PO: 71860.0 PA, 10.422 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	66370.0	9.626	84686.4	5.028	-0.159
0.084	65628.8	9.518	84641.5	5.024	-0.180
0.138	65385.2	9.488	34641.3	5.024	-0.187
0.182	65425.8	9.489	34688.8	5.024	-0.186
0.225	65796.7	9.548	34645.8	5.025	-0.175
0.268	67255.8	9.754	84636.6	5.023	-0.188
0.318	66982.9	9.715	34642.4	5.024	-0.141
0.353	67617.2	9.807	34648.1	5.024	-0.122
0.392	66425.6	9.634	84649.7	5.025	-0.157
0.434	66530.6	9.649	34650.6	5.025	-0.154
0.502	66148.8	9.594	34659.6	5.027	-0.165
0.556	65861.6	9.552	34668.8	5.028	-0.173
0.606	65477.3	9.496	34685.3	5.030	-0.184
0.665	66416.2	9.633	34686.4	5.031	-0.157
0.716	65255.7	9.464	34699.4	5.033	-0.190
0.770	64896.7	9.412	34705.9	5.038	-0.201
0.828	66000.4	9.572	34725.4	5.036	-0.169
0.892	67220.6	9.749	34738.7	5.038	-0.134
0.941	67431.1	9.780	34750.0	5.040	-0.127
0.984	67141.9	9.788	34756.8	5.041	-0.136
FACE					
0.041	72993.7	10.586	84630.3	5.028	0.033
0.086	78107.8	10.603	84631.5	5.028	0.036
0.144	72889.4	10.499	84624.7	5.022	0.015
0.192	72015.5	10.445	34623.9	5.022	0.004
0.238	71832.4	10.418	34623.0	5.021	-0.001
0.288	72189.3	10.470	34624.2	5.022	0.010
0.348	72098.2	10.457	34628.5	5.022	0.007
0.450	71927.2	10.432	34631.1	5.023	0.002
0.539	71861.2	10.422	34651.8	5.026	0.000
0.631	71452.7	10.363	84660.0	5.027	-0.012
0.688	71804.5	10.414	34673.2	5.029	-0.002
0.748	71830.6	10.418	34682.0	5.030	-0.001
0.804	72451.4	10.508	34703.5	5.033	0.017
0.863	72280.8	10.483	34715.2	5.035	0.012
0.920	71130.6	10.316	34729.8	5.037	-0.021
0.973	68226.2	9.895	34745.8	5.039	-0.105

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 11    MACH NO: 0.60    ADV. RATIO: 3.084

POWER COEFF: 0.231    RECORD NO: 81.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 81.0

WIND TUNNEL:

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STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	71860.0 PA	10.422 PSI
AIR DENSITY:	0.9070 KG/M3	0.05662 LBF/FT3
SPEED OF SOUND:	833.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	199.83 M/S	655.65 FT/S

PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1420.0	
ADVANCE RATIO:	3.084	
POWER COEFFICIENT:	0.231	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.846	

RUN DATE:	03-09-1987
RUN TIME:	22:11:46

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 81.0

RADIAL STATION: 11

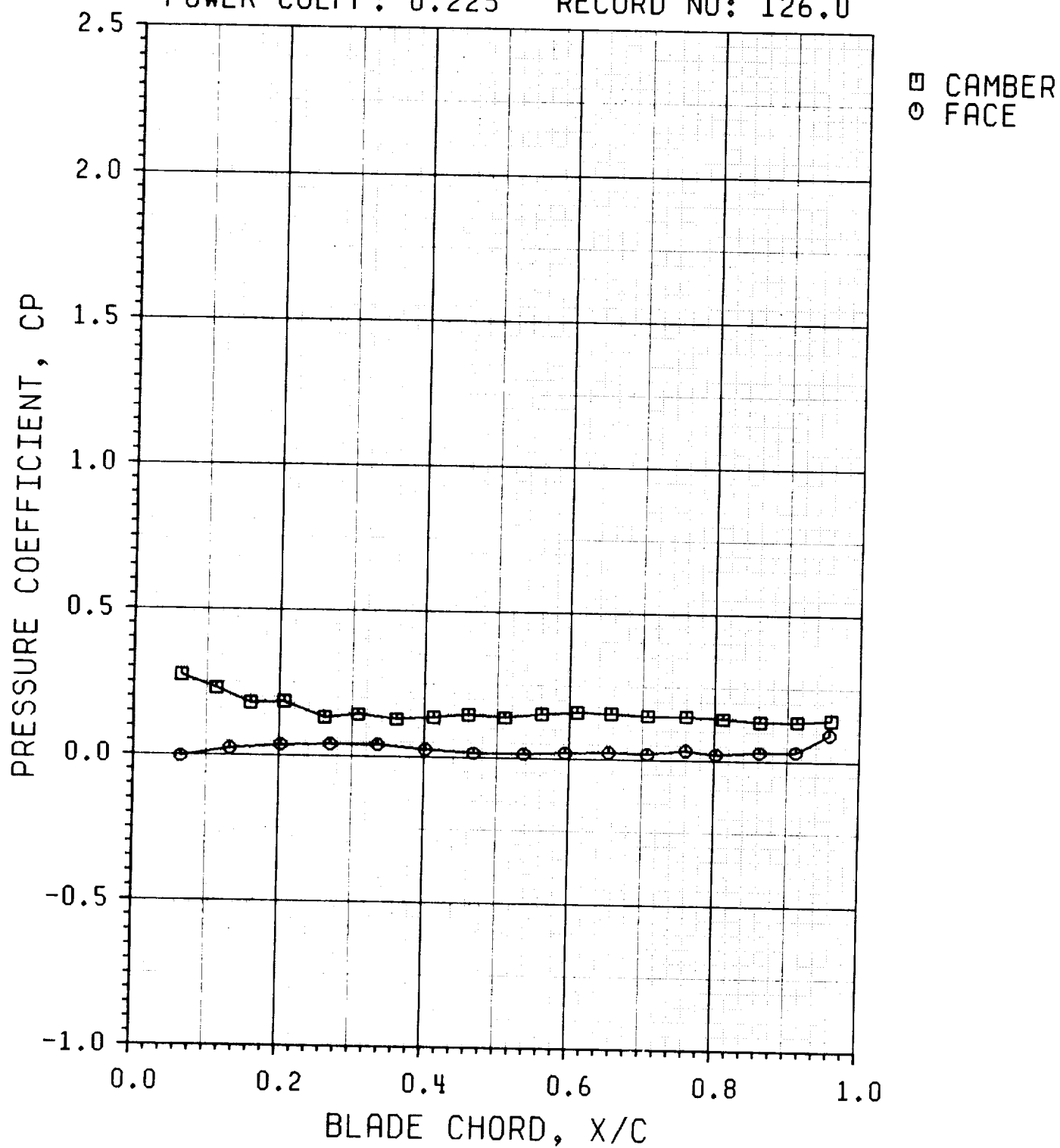
TUNNEL STATIC PRESSURE, PO: 71860.0 PA, 10.422 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	63552.9	9.217	35967.2	5.216	-0.231
0.123	63836.5	9.258	35977.9	5.218	-0.223
0.179	64203.8	9.312	35982.8	5.219	-0.213
0.228	64168.4	9.307	35983.3	5.219	-0.214
0.267	64312.1	9.327	35985.7	5.219	-0.210
0.309	65604.8	9.515	35978.0	5.218	-0.174
0.353	67762.9	9.828	35978.8	5.218	-0.114
0.399	68249.7	9.898	35979.4	5.218	-0.100
0.444	66713.7	9.676	35981.9	5.219	-0.143
0.487	66992.6	9.716	35987.0	5.219	-0.135
0.533	66751.1	9.681	35993.7	5.220	-0.142
0.581	65905.1	9.558	35996.9	5.221	-0.165
0.632	65571.2	9.510	35999.3	5.221	-0.175
0.673	65796.1	9.543	36003.3	5.222	-0.168
0.717	66012.8	9.574	35998.1	5.221	-0.162
0.774	66763.7	9.683	36007.2	5.222	-0.142
0.822	*****	*****	36008.1	5.222	*****
0.875	*****	*****	36010.0	5.223	*****
0.928	*****	*****	36030.8	5.226	*****
0.974	66811.4	9.690	36029.9	5.226	-0.140
FACE					
0.058	73118.2	10.605	35958.7	5.215	0.035
0.116	72491.8	10.514	35959.8	5.215	0.018
0.185	71263.6	10.336	35951.4	5.214	-0.017
0.236	71217.1	10.329	35958.0	5.215	-0.018
0.307	71407.7	10.356	35954.2	5.215	-0.013
0.365	70983.4	10.295	35954.1	5.215	-0.024
0.425	70640.2	10.245	35955.6	5.215	-0.034
0.507	71113.1	10.314	35951.1	5.214	-0.021
0.578	71228.7	10.330	35960.7	5.215	-0.018
0.644	71332.3	10.346	35967.2	5.216	-0.015
0.702	71526.8	10.374	35967.2	5.216	-0.009
0.758	70997.2	10.297	35977.1	5.218	-0.024
0.808	71490.1	10.368	35983.7	5.219	-0.010
0.861	71370.7	10.351	35988.1	5.219	-0.014
0.914	71102.4	10.312	35993.9	5.220	-0.021
0.963	68244.1	9.898	36001.3	5.221	-0.100

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12 MACH NO: 0.60 ADV. RATIO: 3.085

POWER COEFF: 0.225 RECORD NO: 126.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 126.0

WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	71980.0 PA	10.439 PSI
AIR DENSITY:	0.9085 KG/M3	0.05672 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	199.83 M/S	655.65 FT/S

PROPFAN:

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1420.0	
ADVANCE RATIO:	3.085	
POWER COEFFICIENT:	0.225	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.8685 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.850	

RUN DATE:	03-11-1987
RUN TIME:	18:06:07

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 126.0

RADIAL STATION: 12

TUNNEL STATIC PRESSURE, PO: 71980.0 PA, 10.489 PSI

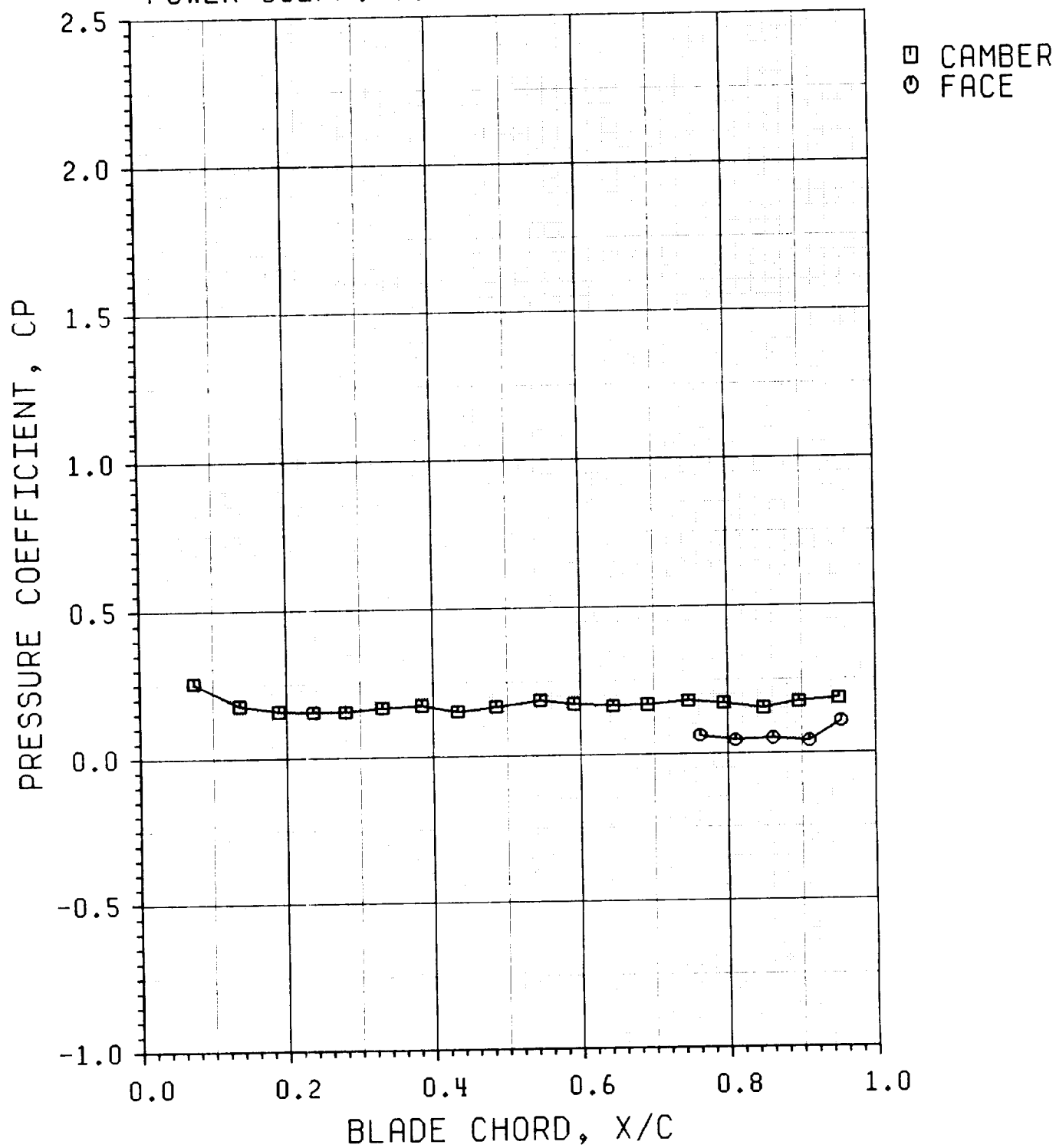
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	62090.8	9.005	36419.8	5.282	-0.272
0.118	63652.9	9.232	36427.3	5.283	-0.229
0.160	65432.9	9.490	36429.6	5.283	-0.180
0.206	65243.6	9.462	36426.7	5.283	-0.185
0.262	67154.1	9.740	36426.0	5.283	-0.132
0.308	66748.1	9.681	36419.5	5.282	-0.144
0.361	67271.6	9.757	36428.0	5.283	-0.129
0.412	66945.1	9.709	36421.1	5.282	-0.138
0.460	66637.4	9.665	36415.2	5.281	-0.147
0.510	66912.0	9.704	36423.7	5.283	-0.139
0.561	66420.9	9.633	36430.9	5.284	-0.153
0.610	66158.6	9.594	36439.9	5.285	-0.160
0.657	66219.2	9.604	36433.9	5.284	-0.158
0.707	66469.4	9.640	36435.4	5.284	-0.151
0.760	66486.4	9.643	36434.5	5.284	-0.151
0.811	66728.4	9.678	36436.6	5.285	-0.144
0.862	67067.7	9.727	36438.2	5.285	-0.135
0.913	67040.1	9.723	36446.8	5.286	-0.136
0.960	66784.1	9.686	36448.8	5.286	-0.143
FACE					
0.065	72206.1	10.472	36411.0	5.281	0.006
0.132	71124.6	10.315	36413.9	5.281	-0.023
0.202	70655.6	10.247	36406.9	5.280	-0.036
0.270	70540.1	10.231	36407.0	5.280	-0.040
0.335	70528.7	10.229	36404.4	5.280	-0.040
0.401	71086.9	10.310	36402.7	5.280	-0.025
0.468	71477.5	10.367	36402.3	5.280	-0.014
0.537	71465.5	10.365	36399.2	5.279	-0.014
0.594	71278.9	10.338	36408.1	5.280	-0.019
0.654	71162.6	10.321	36407.4	5.280	-0.022
0.707	71296.4	10.340	36416.8	5.282	-0.019
0.760	70816.1	10.271	36416.5	5.282	-0.032
0.802	71213.0	10.328	36413.4	5.281	-0.021
0.862	70938.2	10.288	36423.2	5.283	-0.029
0.912	70855.4	10.276	36420.3	5.282	-0.031
0.958	68587.4	9.947	36428.1	5.283	-0.093

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 13    MACH NO: 0.60    ADV. RATIO: 3.081

POWER COEFF: 0.236    RECORD NO: 67.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 67.0

WIND TUNNEL:

STATIC TEMPERATURE:	286.0 K	55.1 F
STATIC PRESSURE:	71660.0 PA	10.393 PSI
AIR DENSITY:	0.8728 KG/M3	0.05449 LBF/FT3
SPEED OF SOUND:	339.03 M/S	1112.37 FT/S
INFLOW MACH NUMBER:	0.60	
INFLOW VELOCITY:	203.42 M/S	667.42 FT/S

PROPFAN:

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1447.0	
ADVANCE RATIO:	3.081	
POWER COEFFICIENT:	0.236	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	0.855	

RUN DATE:	03-09-1987
RUN TIME:	17:45:28

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 67.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 71660.0 PA, 10.393 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	62255.1	9.029	36687.8	5.321	-0.256
0.136	65127.9	9.446	36690.6	5.321	-0.178
0.189	65872.7	9.554	36678.9	5.319	-0.158
0.236	66018.8	9.575	36676.7	5.319	-0.154
0.280	66002.8	9.572	36678.7	5.320	-0.154
0.330	65573.2	9.510	36669.0	5.318	-0.166
0.384	65361.0	9.479	36671.6	5.319	-0.172
0.433	66139.2	9.592	36672.0	5.319	-0.151
0.485	65568.4	9.510	36663.7	5.317	-0.166
0.545	64854.1	9.406	36664.6	5.318	-0.186
0.591	65338.2	9.476	36666.2	5.318	-0.172
0.644	65637.7	9.520	36661.3	5.317	-0.164
0.691	65483.6	9.497	36659.0	5.317	-0.168
0.746	65098.9	9.441	36658.6	5.317	-0.179
0.794	65381.5	9.482	36664.6	5.318	-0.171
0.848	66050.3	9.579	36662.8	5.317	-0.153
0.896	65264.0	9.465	36663.2	5.317	-0.174
0.950	64917.3	9.415	36665.3	5.318	-0.184
FACE					
0.074	*****	*****	36670.8	5.318	*****
0.150	*****	*****	36665.2	5.318	*****
0.229	*****	*****	36669.6	5.318	*****
0.302	*****	*****	36656.8	5.316	*****
0.374	*****	*****	36657.1	5.316	*****
0.450	*****	*****	36654.4	5.316	*****
0.519	*****	*****	36646.6	5.315	*****
0.569	*****	*****	36646.6	5.315	*****
0.619	*****	*****	36648.4	5.315	*****
0.669	*****	*****	36651.1	5.316	*****
0.716	*****	*****	36651.4	5.316	*****
0.762	69407.9	10.066	36650.1	5.315	-0.061
0.810	70055.7	10.160	36645.3	5.315	-0.044
0.861	69826.1	10.127	36639.0	5.314	-0.050
0.910	70180.2	10.178	36653.8	5.316	-0.040
0.953	67759.8	9.827	36646.3	5.315	-0.106

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B11

(B11.1 through B11.10)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.700 \pm 0.002$

Advance Ratio,  $J = 3.064 \pm 0.012$

Power Coefficient,  $CP = 0.228 \pm 0.006$

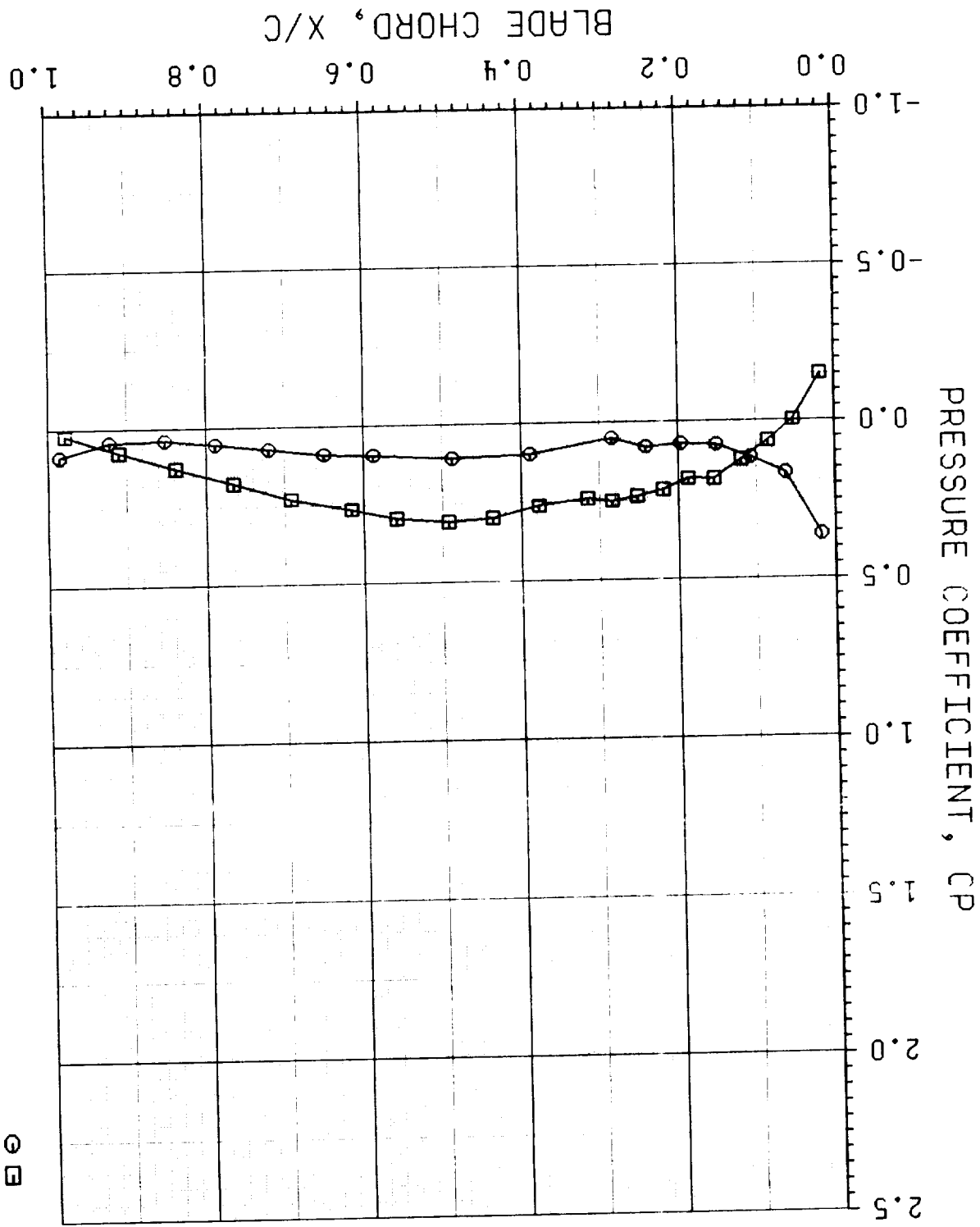
Blade Angle,  $\beta = 54.5 \pm 1.3^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.70 ADV. RATIO: 3.061

POWER COEFF: 0.222 RECORD NO: 165.0

□ CAMBER  
○ FACE



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 165.0

WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	67650.0 PA	9.811 PSI
AIR DENSITY:	0.8538 KG/M3	0.05330 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	233.14 M/S	764.93 FT/S

PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1669.0	
ADVANCE RATIO:	3.061	
POWER COEFFICIENT:	0.222	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.810	
REL MACH NO. (@ MID CHORD):	0.735	

RUN DATE:	03-12-1987
RUN TIME:	17:44:09

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 165.0

RADIAL STATION: 1

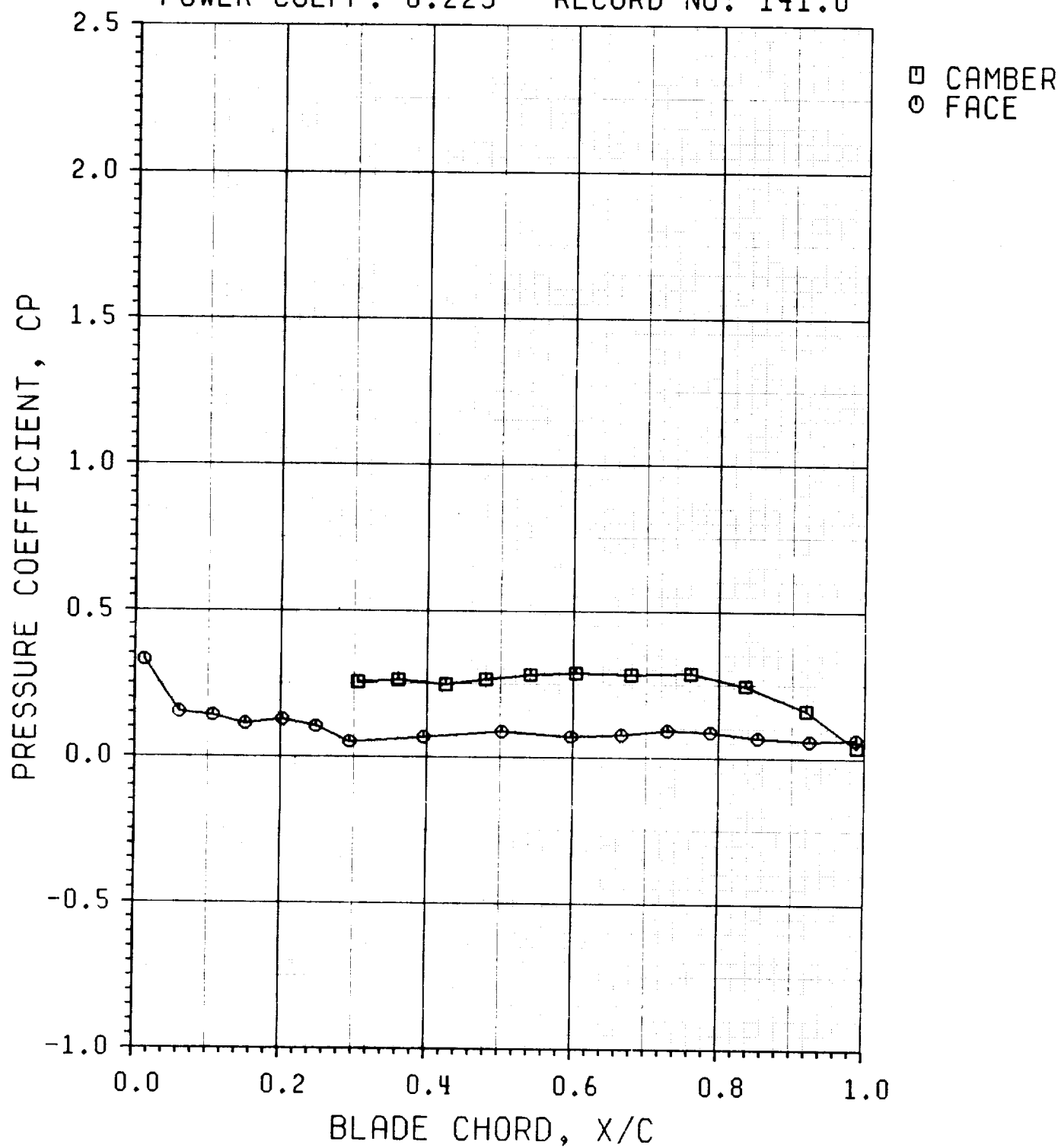
TUNNEL STATIC PRESSURE, PO: 67650.0 PA, 9.811 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	71422.0	10.359	25018.0	3.628	0.151
0.053	67748.9	9.826	25041.9	3.632	0.004
0.085	66084.2	9.584	25068.8	3.635	-0.062
0.119	64558.6	9.363	25091.6	3.639	-0.128
0.154	63060.3	9.146	25119.5	3.643	-0.183
0.187	63096.6	9.151	25150.9	3.648	-0.181
0.219	62245.2	9.028	25181.9	3.652	-0.215
0.252	61726.0	8.952	25211.9	3.657	-0.235
0.284	61370.6	8.901	25243.0	3.661	-0.249
0.315	61580.4	8.931	25278.3	3.666	-0.240
0.377	61086.4	8.852	25345.2	3.676	-0.261
0.436	60083.1	8.714	25417.8	3.686	-0.298
0.492	59808.7	8.674	25461.9	3.693	-0.308
0.558	60108.0	8.718	25566.2	3.708	-0.295
0.615	60891.2	8.831	25643.2	3.719	-0.264
0.692	61750.9	8.956	25739.3	3.733	-0.229
0.765	63049.5	9.144	25850.1	3.749	-0.178
0.838	64840.4	9.331	25948.5	3.763	-0.128
0.910	65695.1	9.528	26057.1	3.779	-0.075
0.978	67096.6	9.731	26157.6	3.794	-0.021
FACE					
0.018	58641.5	8.505	25029.7	3.630	-0.360
0.063	68502.9	9.210	25092.3	3.639	-0.165
0.107	64751.3	9.391	25137.4	3.646	-0.115
0.151	65791.2	9.542	25178.0	3.652	-0.074
0.196	65883.9	9.555	25222.2	3.658	-0.070
0.241	65654.7	9.522	25264.3	3.664	-0.079
0.284	66388.6	9.629	25302.2	3.670	-0.050
0.388	65172.1	9.452	25405.3	3.685	-0.098
0.487	64898.4	9.412	25513.6	3.700	-0.108
0.587	65250.3	9.463	25627.0	3.717	-0.094
0.650	65359.3	9.479	25695.6	3.727	-0.089
0.720	65842.2	9.549	25780.2	3.739	-0.070
0.788	66268.0	9.611	25871.2	3.752	-0.053
0.852	66683.8	9.671	25958.4	3.765	-0.037
0.922	66544.9	9.651	26058.2	3.779	-0.042
0.985	65358.5	9.479	26155.3	3.793	-0.088

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3 MACH NO: 0.70 ADV. RATIO: 3.067

POWER COEFF: 0.225 RECORD NO: 141.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 141.0

## WIND TUNNEL:

STATIC TEMPERATURE:	274.0 K	32.5 F
STATIC PRESSURE:	67760.0 PA	9.827 PSI
AIR DENSITY:	0.8614 KG/M3	0.05378 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	232.29 M/S	762.15 FT/S

## PROPFAN:

RADIAL STATION:	3	
ROTOR SPEED (RPM):	1660.0	
ADVANCE RATIO:	3.067	
POWER COEFFICIENT:	0.225	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.569	
REL MACH NO. (@ MID CHORD):	0.810	

RUN DATE:	03-11-1987
RUN TIME:	21:56:58

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 141.0

RADIAL STATION: 3

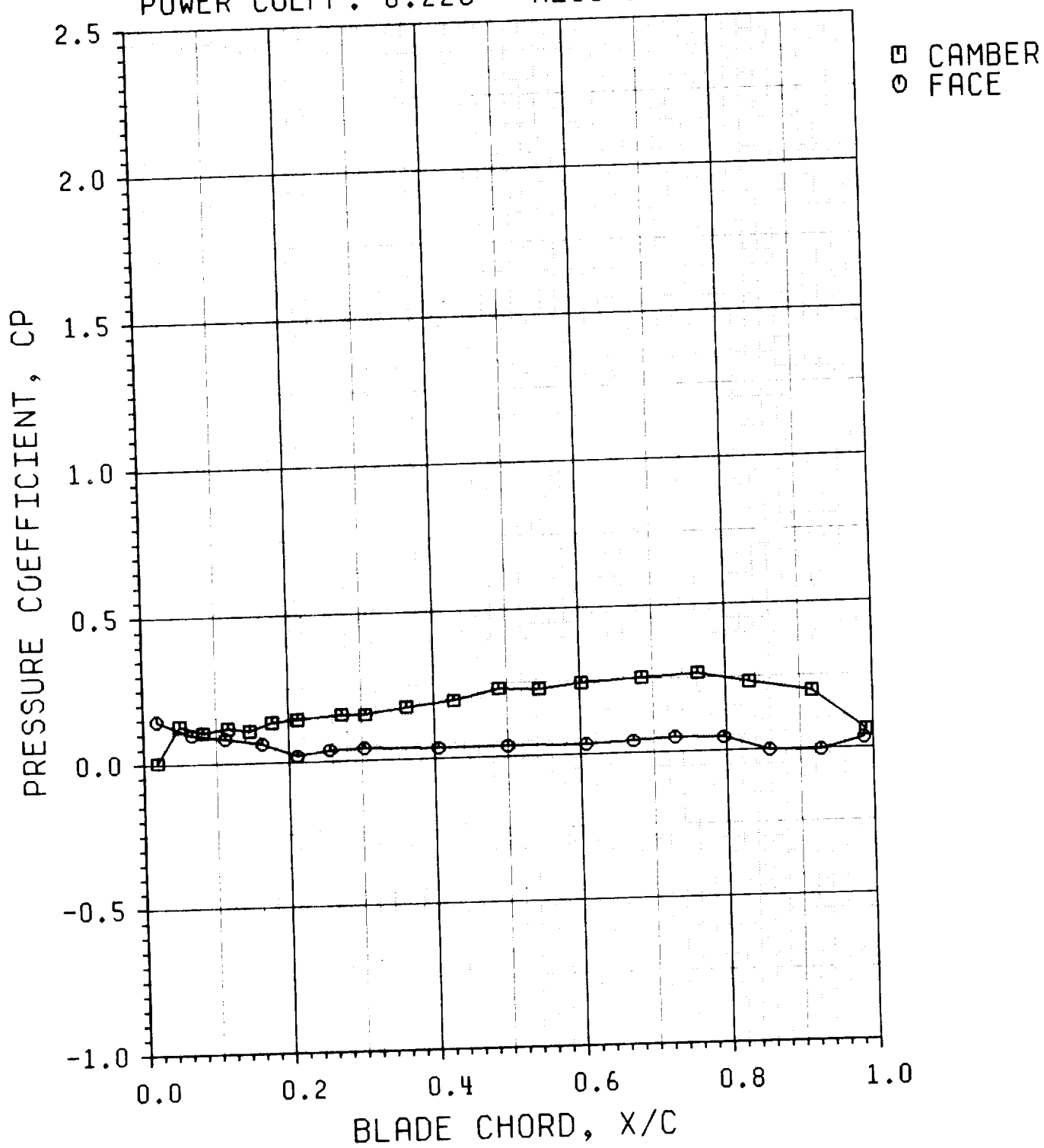
TUNNEL STATIC PRESSURE, PO: 67760.0 PA, 9.827 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	*****	*****	30700.0	4.453	*****
0.046	*****	*****	80704.4	4.453	*****
0.077	*****	*****	30700.1	4.453	*****
0.107	*****	*****	30708.8	4.454	*****
0.139	*****	*****	30711.0	4.454	*****
0.178	*****	*****	30714.0	4.455	*****
0.201	*****	*****	30727.8	4.456	*****
0.238	*****	*****	30739.7	4.458	*****
0.271	*****	*****	30757.4	4.461	*****
0.305	59896.5	8.687	30779.4	4.464	-0.255
0.360	59678.6	8.655	30811.9	4.469	-0.262
0.425	60109.5	8.718	30863.1	4.476	-0.248
0.480	59581.8	8.641	30903.0	4.482	-0.265
0.541	59049.2	8.564	30974.6	4.492	-0.281
0.603	58807.0	8.529	31034.1	4.501	-0.288
0.679	58941.7	8.548	31135.6	4.516	-0.283
0.761	58801.8	8.528	31241.7	4.531	-0.287
0.836	60050.8	8.709	31355.4	4.548	-0.246
0.919	62626.4	9.083	31485.4	4.566	-0.163
0.989	66613.7	9.661	31604.8	4.584	-0.036
FACE					
0.013	57641.2	8.360	30719.1	4.455	-0.329
0.061	63054.8	9.145	30728.8	4.457	-0.153
0.107	63414.2	9.197	30738.8	4.457	-0.141
0.151	64331.7	9.330	30743.0	4.459	-0.112
0.202	63861.6	9.262	30759.2	4.461	-0.127
0.248	64569.5	9.365	30774.4	4.463	-0.104
0.294	66185.1	9.599	30795.4	4.466	-0.051
0.395	65702.6	9.529	30854.4	4.475	-0.067
0.502	65049.8	9.434	30945.8	4.488	-0.088
0.597	65571.2	9.510	31029.7	4.500	-0.071
0.666	65325.6	9.474	31119.9	4.513	-0.078
0.729	64890.5	9.411	31183.2	4.523	-0.092
0.788	64999.6	9.427	31264.7	4.534	-0.088
0.853	65641.3	9.520	31366.4	4.549	-0.068
0.924	65974.1	9.568	31476.7	4.565	-0.057
0.988	65792.7	9.542	31594.8	4.582	-0.062

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5 MACH NO: 0.70 ADV. RATIO: 3.052

POWER COEFF: 0.228 RECORD NO: 56.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 56.0

WIND TUNNEL:

STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	67360.0 PA	9.769 PSI
AIR DENSITY:	0.8410 KG/M3	0.05250 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	234.40 M/S	769.07 FT/S

PROPFAN:

RADIAL STATION:	5	
ROTOR SPEED (RPM):	1683.0	
ADVANCE RATIO:	3.052	
POWER COEFFICIENT:	0.228	
BLADE ANGLE (@ X=41" STA):	55.0 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.739	
REL MACH NO. (@ MID CHORD):	0.879	

RUN DATE:	03-06-1987
RUN TIME:	18:55:31

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 56.0

RADIAL STATION: 5

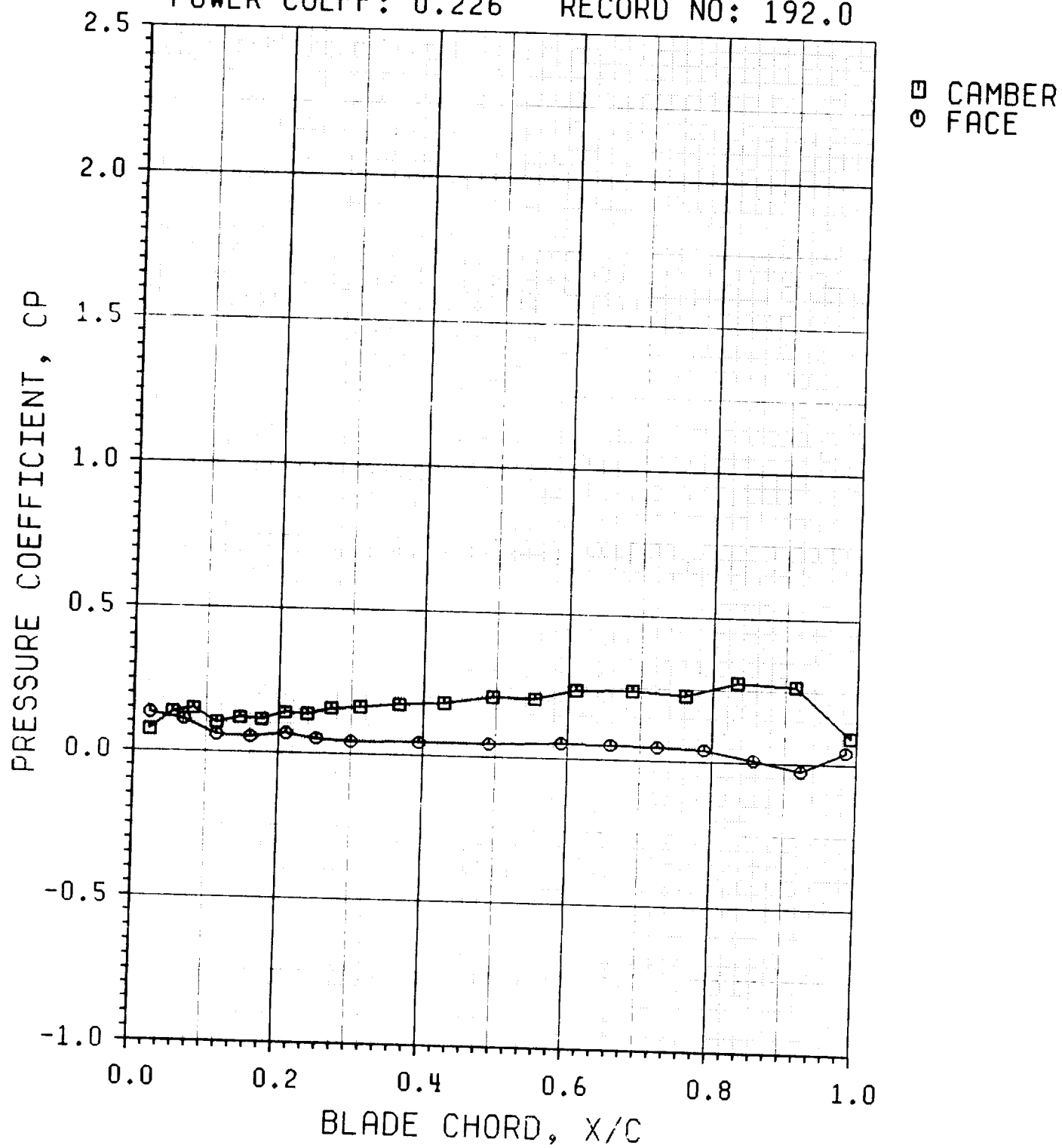
TUNNEL STATIC PRESSURE, PO: 67860.0 PA, 9.769 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	67220.7	9.749	36185.7	5.248	-0.004
0.050	62774.6	9.104	36167.6	5.245	-0.127
0.082	63601.2	9.224	36147.7	5.248	-0.104
0.116	63086.4	9.150	36184.1	5.241	-0.118
0.146	63502.0	9.210	36122.4	5.239	-0.107
0.177	62491.2	9.063	36114.8	5.288	-0.135
0.212	62218.8	9.024	36109.6	5.287	-0.142
0.241	*****	*****	36107.7	5.237	*****
0.273	61731.4	8.953	36107.1	5.237	-0.156
0.305	61816.2	8.965	36108.5	5.287	-0.154
0.362	61009.5	8.848	36122.6	5.239	-0.176
0.427	60346.0	8.752	36147.7	5.243	-0.194
0.489	59002.8	8.557	36171.5	5.246	-0.231
0.544	59168.6	8.581	36207.8	5.251	-0.226
0.602	58545.0	8.491	36261.3	5.259	-0.243
0.685	58106.7	8.427	36336.1	5.270	-0.255
0.762	57683.7	8.366	36420.4	5.282	-0.266
0.832	58895.4	8.542	36509.0	5.295	-0.232
0.917	60108.0	8.718	36632.9	5.313	-0.198
0.990	65140.7	9.448	36747.2	5.330	-0.060
FACE					
0.019	62098.7	9.006	36206.3	5.251	-0.145
0.067	63880.1	9.265	36177.1	5.247	-0.096
0.112	64405.7	9.341	36148.9	5.248	-0.082
0.163	65080.8	9.439	36137.4	5.241	-0.063
0.211	66676.0	9.670	36134.6	5.241	-0.019
0.256	66055.4	9.580	36133.1	5.240	-0.036
0.303	65921.1	9.561	36132.6	5.240	-0.040
0.405	66184.6	9.592	36145.5	5.242	-0.034
0.500	66147.1	9.593	36183.9	5.248	-0.034
0.607	66171.3	9.597	36268.2	5.260	-0.033
0.672	65943.6	9.564	36318.2	5.267	-0.039
0.729	65629.6	9.518	36383.4	5.277	-0.048
0.796	65750.8	9.536	36456.1	5.287	-0.044
0.858	67431.4	9.780	36530.9	5.298	0.002
0.928	67535.0	9.795	36634.4	5.313	0.005
0.987	66173.1	9.597	36732.5	5.327	-0.032

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.70 ADV. RATIO: 3.068

POWER COEFF: 0.226 RECORD NO: 192.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 192.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	67480.0 PA	9.780 PSI
AIR DENSITY:	0.8449 KG/M3	0.05275 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	233.98 M/S	767.69 FT/S

## PROPFAN:

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RADIAL STATION:	6	
ROTOR SPEED (RPM):	1670.0	
ADVANCE RATIO:	3.068	
POWER COEFFICIENT:	0.226	
BLADE ANGLE (@ X=41" STA):	53.2 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3700 M	53.94 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.908	

RUN DATE:	03-13-1987
RUN TIME:	15:00:21

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 192.0

RADIAL STATION: 6

TUNNEL STATIC PRESSURE, PO: 67430.0 PA, 9.780 PSI

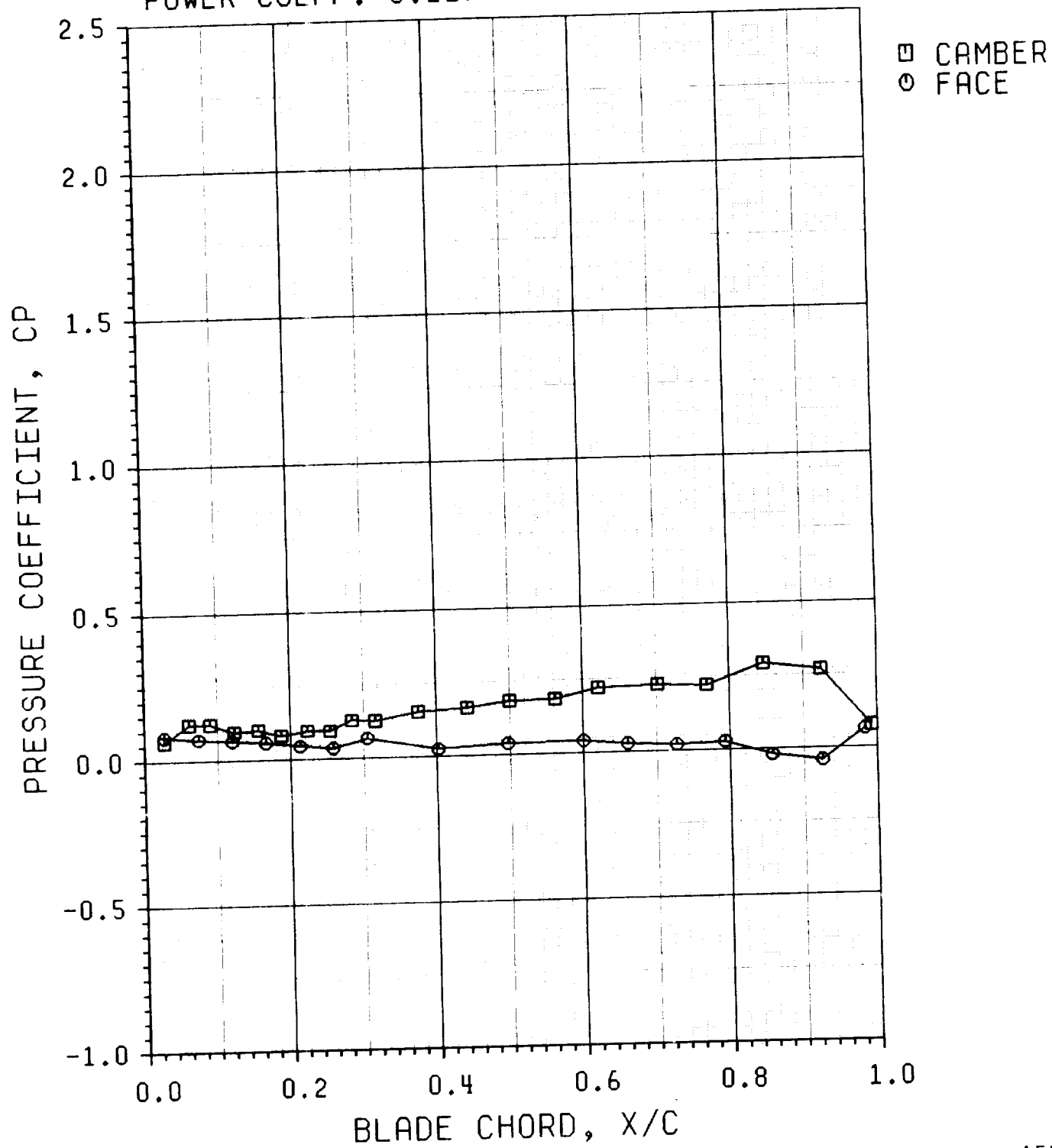
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	64572.9	9.365	38640.9	5.604	-0.074
0.053	62181.1	9.018	38625.9	5.602	-0.136
0.082	61684.5	8.946	38614.2	5.600	-0.149
0.114	63514.5	9.212	38613.7	5.600	-0.101
0.146	62840.4	9.114	38607.1	5.599	-0.119
0.176	63047.9	9.144	38587.8	5.596	-0.114
0.208	62065.5	9.002	38585.2	5.596	-0.139
0.239	62217.0	9.023	38589.6	5.597	-0.135
0.272	61417.2	8.908	38587.4	5.596	-0.156
0.312	61163.2	8.871	38594.2	5.597	-0.162
0.366	60706.6	8.804	38607.1	5.599	-0.174
0.428	60389.6	8.758	38631.0	5.603	-0.182
0.495	59402.2	8.615	38652.7	5.606	-0.208
0.553	59540.3	8.635	38681.4	5.610	-0.204
0.610	58200.3	8.441	38718.4	5.615	-0.238
0.688	58111.0	8.428	38786.2	5.625	-0.240
0.762	58551.1	8.492	38862.5	5.636	-0.228
0.833	56722.5	8.227	38945.2	5.648	-0.275
0.914	57084.5	8.279	39043.3	5.663	-0.265
0.991	63797.8	9.253	39144.4	5.677	-0.093
FACE					
0.022	62326.1	9.039	38651.3	5.606	-0.132
0.069	63138.4	9.157	38629.0	5.602	-0.111
0.114	65118.6	9.444	38612.9	5.600	-0.060
0.161	65345.0	9.477	38595.9	5.598	-0.054
0.210	64787.3	9.396	38593.2	5.597	-0.068
0.252	65458.8	9.494	38588.1	5.597	-0.051
0.300	65773.3	9.539	38581.6	5.596	-0.043
0.394	65723.9	9.532	38602.1	5.599	-0.044
0.491	65709.5	9.530	38631.8	5.603	-0.045
0.591	65389.1	9.484	38695.1	5.612	-0.053
0.659	65447.5	9.492	38737.3	5.618	-0.051
0.724	65549.2	9.507	38797.4	5.627	-0.048
0.789	65832.7	9.548	38856.2	5.635	-0.041
0.857	67115.6	9.734	38946.8	5.649	-0.008
0.923	68519.7	9.938	39033.1	5.661	0.028
0.985	65837.7	9.549	39120.4	5.674	-0.041

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 7 MACH NO: 0.70 ADV. RATIO: 3.058

POWER COEFF: 0.227 RECORD NO: 111.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 111.0

WIND TUNNEL:

STATIC TEMPERATURE:	274.0 K	83.5 F
STATIC PRESSURE:	67570.0 PA	9.800 PSI
AIR DENSITY:	0.8590 KG/M3	0.05368 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	232.29 M/S	762.15 FT/S

PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1665.0	
ADVANCE RATIO:	8.058	
POWER COEFFICIENT:	0.227	
BLADE ANGLE (@ X=41" STA):	55.7 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	0.935	

RUN DATE:	03-10-1987
RUN TIME:	20:51:51

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 111.0

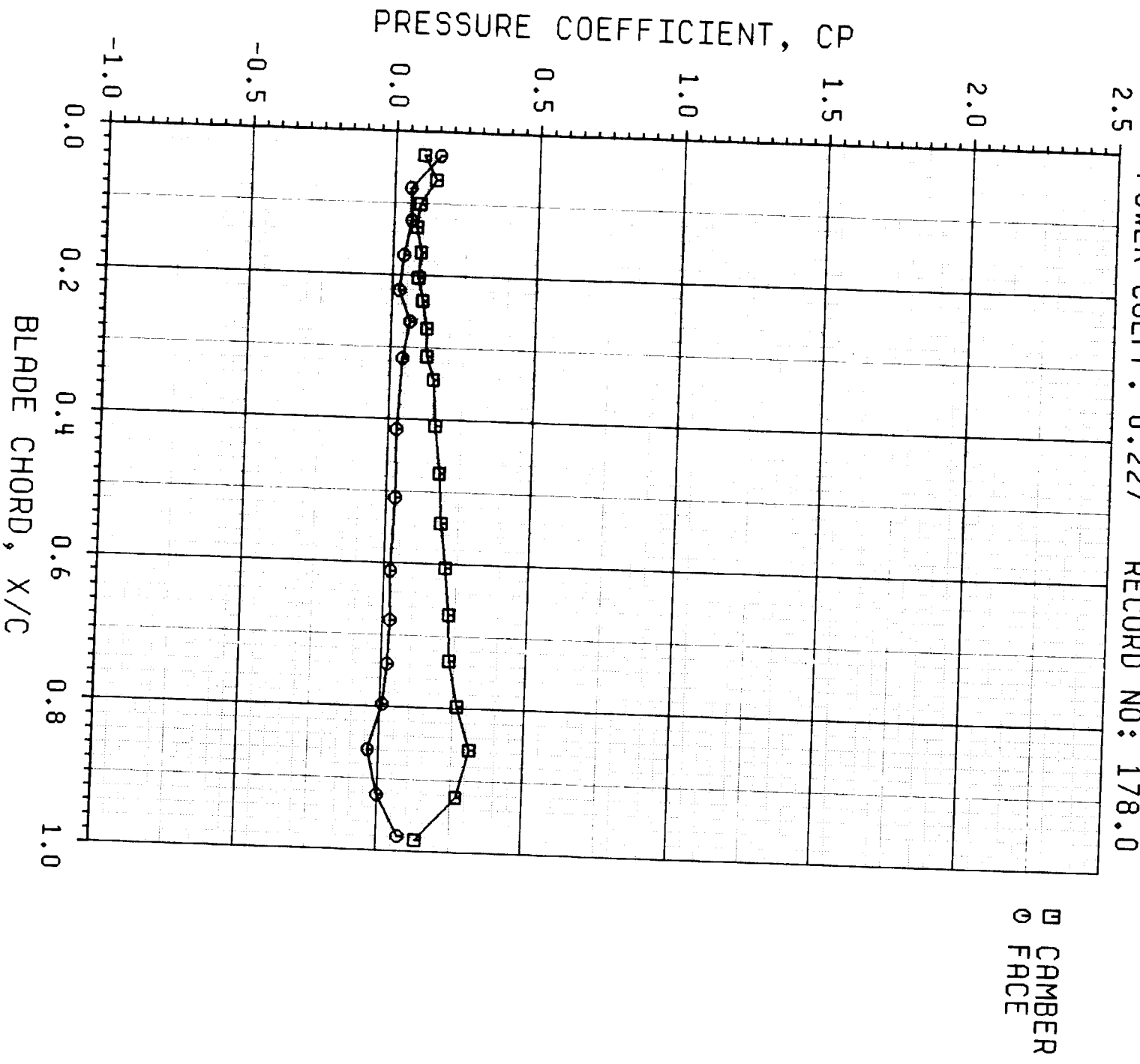
RADIAL STATION: 7

TUNNEL STATIC PRESSURE, P0: 67570.0 PA, 9.800 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	64996.6	9.427	41132.2	5.966	-0.063
0.061	62567.7	9.074	41131.5	5.965	-0.122
0.090	62550.2	9.072	41132.1	5.965	-0.122
0.123	63641.8	9.230	41126.1	5.965	-0.096
0.156	63428.7	9.199	41119.4	5.964	-0.101
0.187	64228.2	9.315	41109.1	5.962	-0.081
0.228	68634.1	9.229	41118.0	5.968	-0.096
0.254	63705.9	9.239	41127.3	5.965	-0.094
0.284	62247.1	9.028	41125.2	5.964	-0.129
0.316	62449.8	9.057	41129.9	5.965	-0.125
0.375	61259.1	8.885	41136.5	5.966	-0.153
0.442	60887.8	8.831	41153.6	5.969	-0.162
0.500	60023.3	8.705	41183.1	5.973	-0.183
0.562	59960.4	8.696	41213.6	5.977	-0.185
0.621	58514.9	8.487	41239.4	5.981	-0.220
0.702	58237.8	8.446	41304.0	5.990	-0.226
0.769	58427.5	8.474	41346.7	5.997	-0.221
0.846	55553.4	8.057	41406.5	6.005	-0.290
0.924	56445.7	8.186	41480.2	6.016	-0.268
0.992	64435.9	9.345	41545.2	6.025	-0.075
FACE					
0.027	64262.0	9.320	41125.7	5.965	-0.080
0.074	64666.6	9.379	41125.7	5.965	-0.071
0.120	64916.2	9.415	41104.6	5.962	-0.065
0.166	65213.5	9.458	41114.6	5.963	-0.057
0.213	65741.7	9.535	41093.8	5.960	-0.044
0.258	66136.9	9.592	41102.7	5.961	-0.035
0.305	64856.1	9.406	41107.6	5.962	-0.066
0.402	66564.6	9.654	41126.2	5.965	-0.024
0.497	66051.2	9.580	41162.2	5.970	-0.037
0.600	65935.8	9.563	41200.7	5.975	-0.040
0.660	66469.9	9.640	41231.1	5.980	-0.027
0.727	66763.3	9.683	41282.0	5.987	-0.020
0.793	66494.3	9.644	41338.4	5.995	-0.026
0.857	68449.4	9.927	41398.4	6.004	0.021
0.925	69328.6	10.055	41463.2	6.014	0.042
0.983	64972.9	9.423	41529.6	6.023	-0.063

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8    MACH NO: 0.70    ADV. RATIO: 3.061  
POWER COEFF: 0.227    RECORD NO: 178.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 178.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	273.0 K	31.7 F
STATIC PRESSURE:	67720.0 PA	9.822 PSI
AIR DENSITY:	0.8641 KG/M3	0.05395 LBF/FT3
SPEED OF SOUND:	831.24 M/S	1086.80 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	231.87 M/S	760.76 FT/S

## PROPFAN:

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RADIAL STATION:	8	
ROTOR SPEED (RPM):	1660.0	
ADVANCE RATIO:	3.061	
POWER COEFFICIENT:	0.227	
BLADE ANGLE (@ X=41" STA):	54.7 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3692 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	0.955	

RUN DATE:	03-12-1987
RUN TIME:	21:21:39

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 178.0

RADIAL STATION: 8

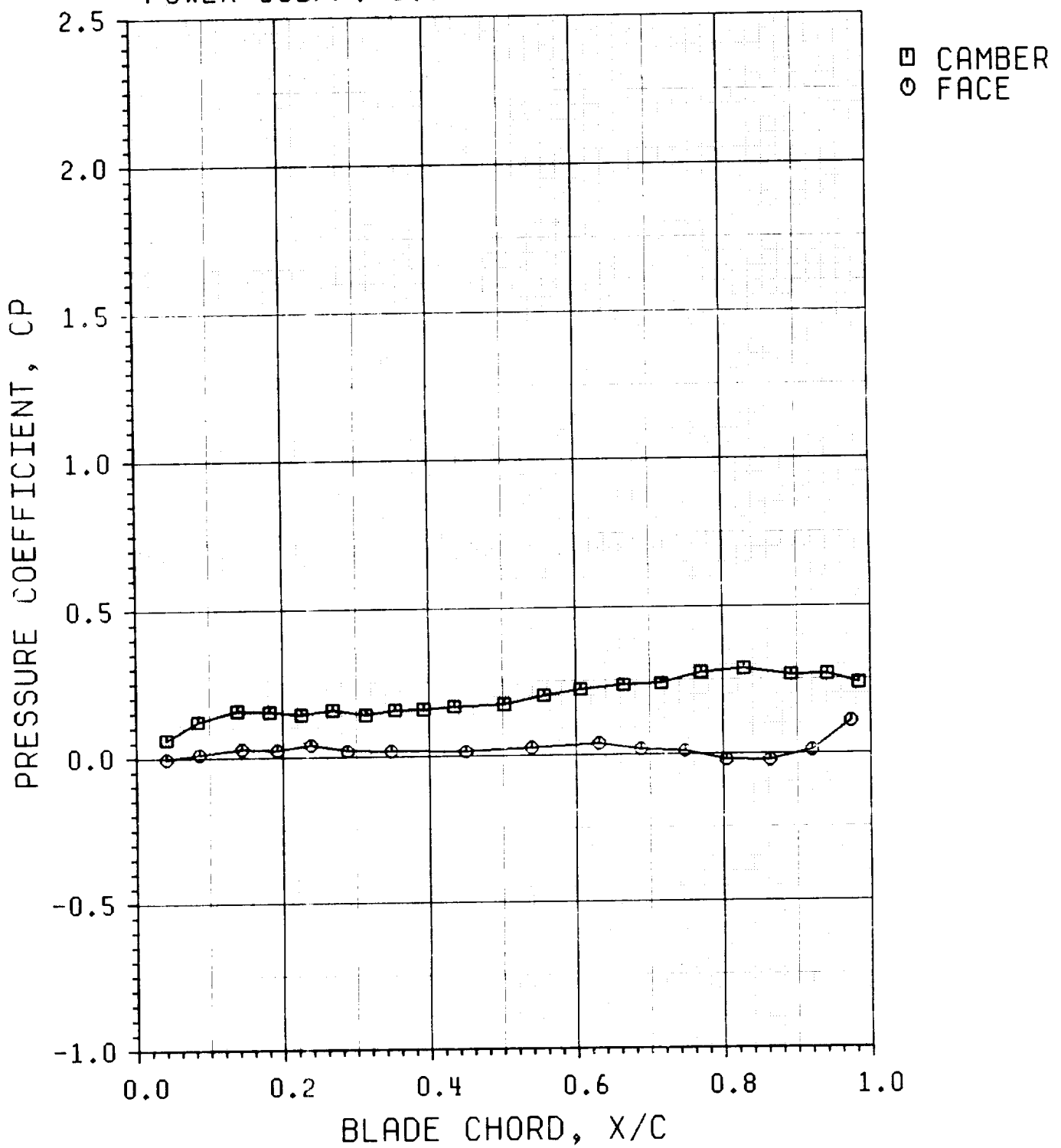
TUNNEL STATIC PRESSURE, PO: 67720.0 PA, 9.822 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	63490.1	9.208	43117.8	6.258	-0.098
0.067	61702.7	8.949	43115.2	6.258	-0.140
0.101	63988.5	9.280	43111.4	6.258	-0.087
0.133	64899.3	9.340	43111.1	6.258	-0.077
0.168	63670.8	9.234	43128.1	6.254	-0.094
0.203	63942.8	9.274	43116.9	6.258	-0.088
0.235	63236.2	9.171	43118.4	6.258	-0.104
0.273	62499.6	9.064	43126.9	6.255	-0.121
0.312	62351.8	9.048	43186.6	6.256	-0.124
0.344	61272.8	8.887	43141.0	6.257	-0.149
0.408	60798.1	8.818	43158.4	6.259	-0.160
0.474	59998.2	8.702	43174.8	6.262	-0.179
0.543	59538.4	8.634	43198.6	6.264	-0.190
0.605	58620.6	8.502	43230.2	6.270	-0.210
0.670	57960.4	8.406	43259.8	6.274	-0.226
0.734	57634.2	8.359	43290.3	6.279	-0.233
0.797	56238.1	8.156	43339.9	6.286	-0.265
0.857	54169.0	7.856	43363.3	6.289	-0.312
0.923	56031.5	8.126	43426.7	6.298	-0.269
0.984	61941.8	8.984	43458.5	6.303	-0.133
FACE					
0.033	61081.3	8.859	43103.1	6.251	-0.154
0.079	65404.1	9.486	43098.2	6.251	-0.054
0.124	65160.1	9.450	43104.0	6.251	-0.059
0.172	66228.7	9.605	43094.8	6.250	-0.035
0.221	66742.9	9.680	43086.9	6.249	-0.023
0.264	65022.4	9.430	43095.5	6.250	-0.063
0.315	65999.9	9.572	43102.4	6.251	-0.040
0.414	66503.6	9.645	43125.6	6.255	-0.028
0.509	66419.9	9.633	43153.4	6.259	-0.030
0.611	66797.9	9.688	43199.0	6.265	-0.021
0.679	66659.1	9.668	43227.3	6.269	-0.025
0.740	66857.5	9.697	43259.3	6.274	-0.020
0.796	67864.1	9.770	43293.4	6.279	-0.008
0.860	69420.9	10.068	43337.0	6.285	0.039
0.922	67841.7	9.839	43400.0	6.294	0.003
0.979	64531.8	9.359	43445.1	6.301	-0.073

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.70 ADV. RATIO: 3.060

POWER COEFF: 0.230 RECORD NO: 96.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 96.0

WIND TUNNEL:

STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	67400.0 PA	9.775 PSI
AIR DENSITY:	0.8355 KG/M3	0.05216 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	235.24 M/S	771.82 FT/S

PROPFAN:

RADIAL STATION:	9	
ROTOR SPEED (RPM):	1685.0	
ADVANCE RATIO:	3.060	
POWER COEFFICIENT:	0.230	
BLADE ANGLE (@ X=41" STA):	55.7 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	0.972	

RUN DATE:	03-10-1987
RUN TIME:	16:05:04



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

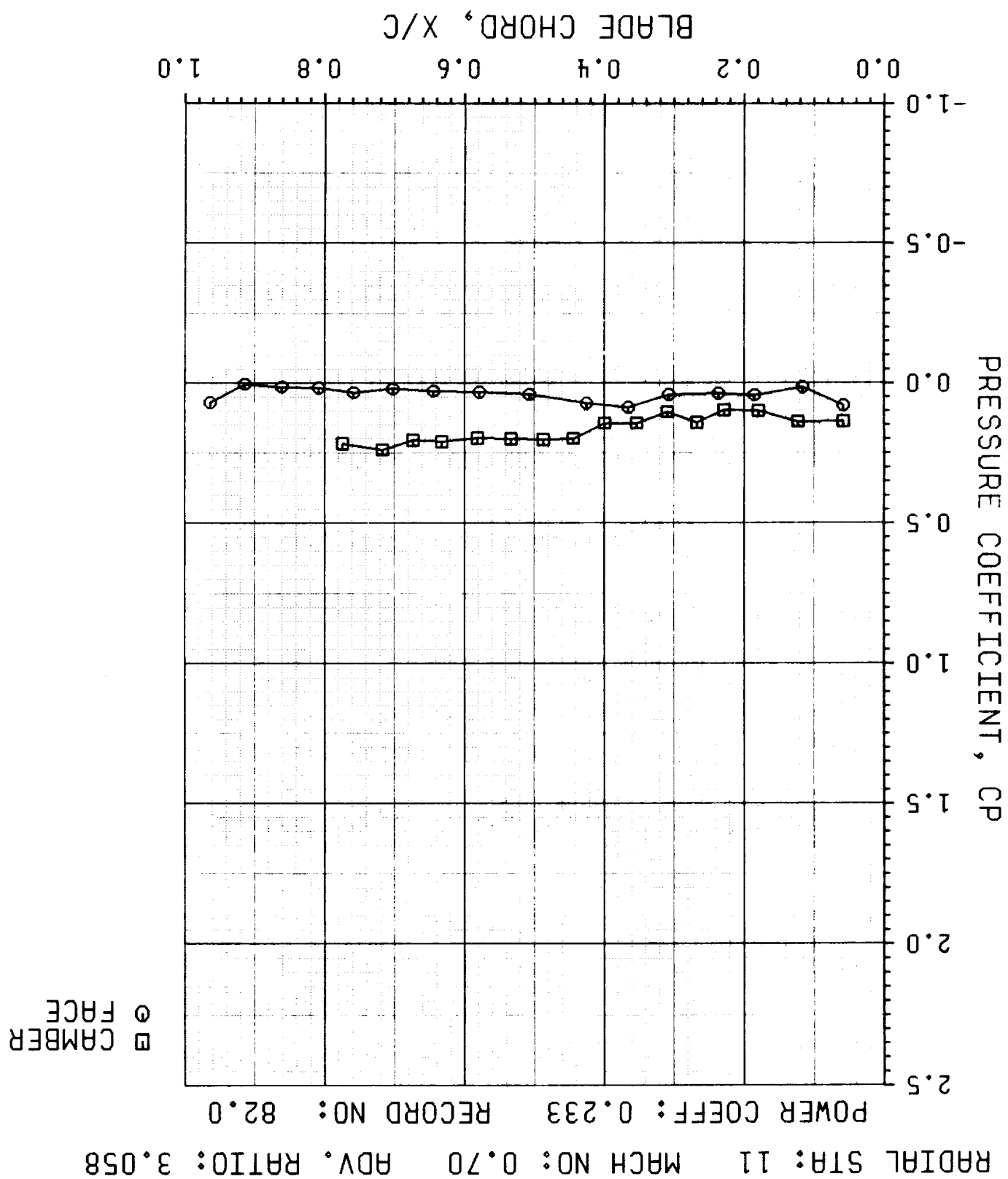
RECORD NUMBER: 96.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 67400.0 PA, 9.775 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	64668.4	9.379	44551.5	6.461	-0.061
0.084	62002.0	8.992	44557.9	6.462	-0.121
0.138	60352.7	8.753	44557.6	6.462	-0.158
0.182	60567.1	8.784	44558.6	6.462	-0.153
0.225	61030.1	8.851	44562.6	6.468	-0.143
0.268	60422.8	8.763	44551.8	6.461	-0.157
0.318	61168.7	8.871	44558.7	6.462	-0.140
0.353	60439.7	8.766	44559.5	6.468	-0.156
0.392	60352.5	8.753	44568.0	6.464	-0.158
0.434	60021.7	8.705	44569.0	6.464	-0.166
0.502	59728.5	8.663	44580.5	6.466	-0.172
0.556	58421.0	8.473	44592.4	6.467	-0.201
0.606	57547.8	8.346	44613.6	6.470	-0.221
0.665	56941.8	8.258	44614.9	6.471	-0.234
0.716	56728.3	8.227	44631.6	6.473	-0.239
0.770	55131.6	7.996	44639.8	6.474	-0.275
0.828	54554.1	7.912	44664.9	6.478	-0.288
0.892	55517.3	8.052	44681.8	6.480	-0.266
0.941	55443.8	8.041	44696.4	6.482	-0.267
0.984	56818.6	8.241	44704.9	6.484	-0.237
FACE					
0.041	67607.4	9.805	44543.4	6.460	0.005
0.086	66936.2	9.708	44545.0	6.460	-0.010
0.144	66197.8	9.601	44536.0	6.459	-0.027
0.192	66357.7	9.624	44534.9	6.459	-0.023
0.238	65598.7	9.514	44538.7	6.459	-0.040
0.288	66556.9	9.653	44535.1	6.459	-0.019
0.348	66647.6	9.666	44540.5	6.460	-0.017
0.450	66764.4	9.683	44543.6	6.460	-0.014
0.539	66288.4	9.614	44570.8	6.464	-0.025
0.631	65710.7	9.530	44580.7	6.466	-0.038
0.688	66599.7	9.659	44597.7	6.468	-0.018
0.748	66952.2	9.710	44608.8	6.470	-0.010
0.804	68327.1	9.910	44636.5	6.474	0.021
0.863	68399.2	9.920	44651.5	6.476	0.022
0.920	66936.6	9.708	44669.5	6.479	-0.010
0.973	62626.9	9.083	44690.0	6.482	-0.107

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 82.0

WIND TUNNEL:

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STATIC TEMPERATURE:	274.0 K	33.5 F
STATIC PRESSURE:	67440.0 PA	9.781 PSI
AIR DENSITY:	0.8574 KG/M3	0.05353 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	232.29 M/S	762.15 FT/S

PROPFAN:

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RADIAL STATION:	11	
ROTOR SPEED (RPM):	1665.0	
ADVANCE RATIO:	3.058	
POWER COEFFICIENT:	0.233	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	0.991	

RUN DATE:	03-09-1987
RUN TIME:	22:20:27

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 82.0

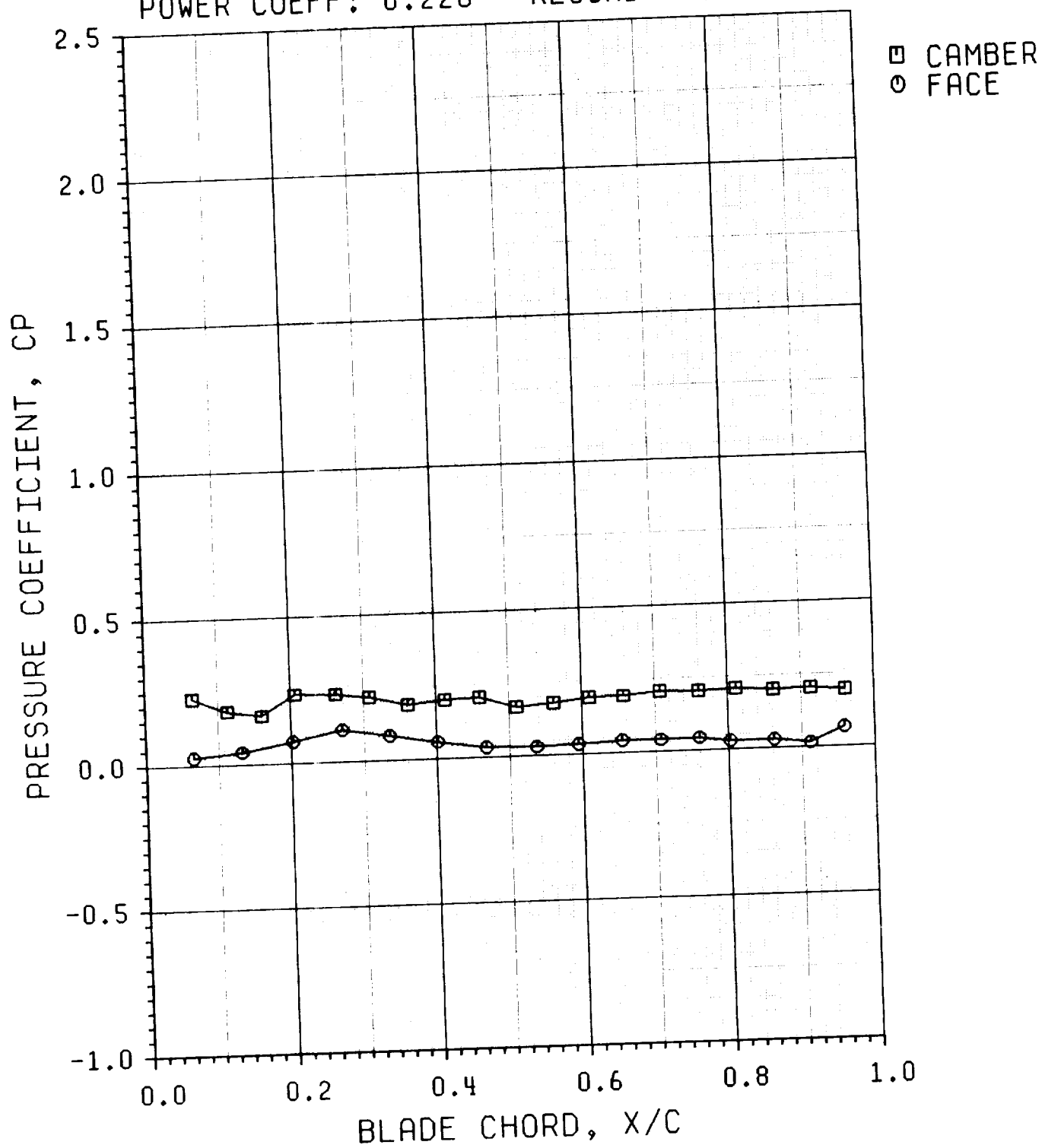
RADIAL STATION: 11

TUNNEL STATIC PRESSURE, PO: 67440.0 PA, 9.781 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	61108.5	8.863	46342.4	6.721	-0.137
0.128	60994.6	8.846	46356.4	6.723	-0.139
0.179	62790.8	9.107	46362.7	6.724	-0.100
0.228	62917.9	9.125	46363.4	6.724	-0.098
0.267	60809.2	8.819	46366.6	6.725	-0.143
0.309	62629.3	9.083	46356.5	6.723	-0.104
0.353	60762.2	8.812	46357.5	6.723	-0.144
0.399	60782.3	8.815	46358.8	6.723	-0.144
0.444	58216.5	8.448	46361.7	6.724	-0.199
0.487	58047.1	8.419	46368.8	6.725	-0.203
0.533	58151.8	8.434	46376.9	6.726	-0.200
0.581	58262.5	8.450	46381.1	6.727	-0.198
0.632	57700.6	8.368	46384.2	6.727	-0.210
0.673	57948.5	8.404	46389.5	6.728	-0.205
0.717	56375.5	8.176	46382.6	6.727	-0.239
0.774	57329.7	8.315	46394.5	6.729	-0.218
0.822	*****	*****	46395.7	6.729	*****
0.875	*****	*****	46398.1	6.729	*****
0.928	*****	*****	46425.2	6.733	*****
0.974	*****	*****	46424.0	6.733	*****
FACE					
0.058	63724.5	9.242	46381.4	6.720	-0.080
0.116	66750.7	9.681	46332.9	6.720	-0.015
0.185	65417.3	9.488	46321.9	6.718	-0.044
0.236	65736.9	9.534	46330.5	6.719	-0.037
0.307	65508.4	9.501	46325.6	6.719	-0.042
0.365	63417.4	9.198	46325.4	6.719	-0.087
0.425	64080.5	9.294	46327.4	6.719	-0.073
0.507	65533.7	9.505	46321.6	6.718	-0.041
0.578	65895.9	9.557	46334.1	6.720	-0.033
0.644	66079.2	9.584	46342.5	6.721	-0.029
0.702	66458.6	9.639	46342.5	6.721	-0.021
0.758	65868.1	9.553	46355.8	6.723	-0.034
0.808	66664.6	9.669	46363.9	6.724	-0.017
0.861	66767.7	9.683	46369.7	6.725	-0.014
0.914	67261.7	9.755	46377.2	6.726	-0.004
0.963	64175.9	9.308	46386.8	6.728	-0.070

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12    MACH NO: 0.70    ADV. RATIO: 3.075  
POWER COEFF: 0.228    RECORD NO: 127.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 127.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	67620.0 PA	9.807 PSI
AIR DENSITY:	0.8534 KG/M3	0.05328 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	233.14 M/S	764.93 FT/S

## PROPFAN:

---

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1662.0	
ADVANCE RATIO:	3.075	
POWER COEFFICIENT:	0.228	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3685 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	0.993	

RUN DATE:	03-11-1987
RUN TIME:	18:16:01

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

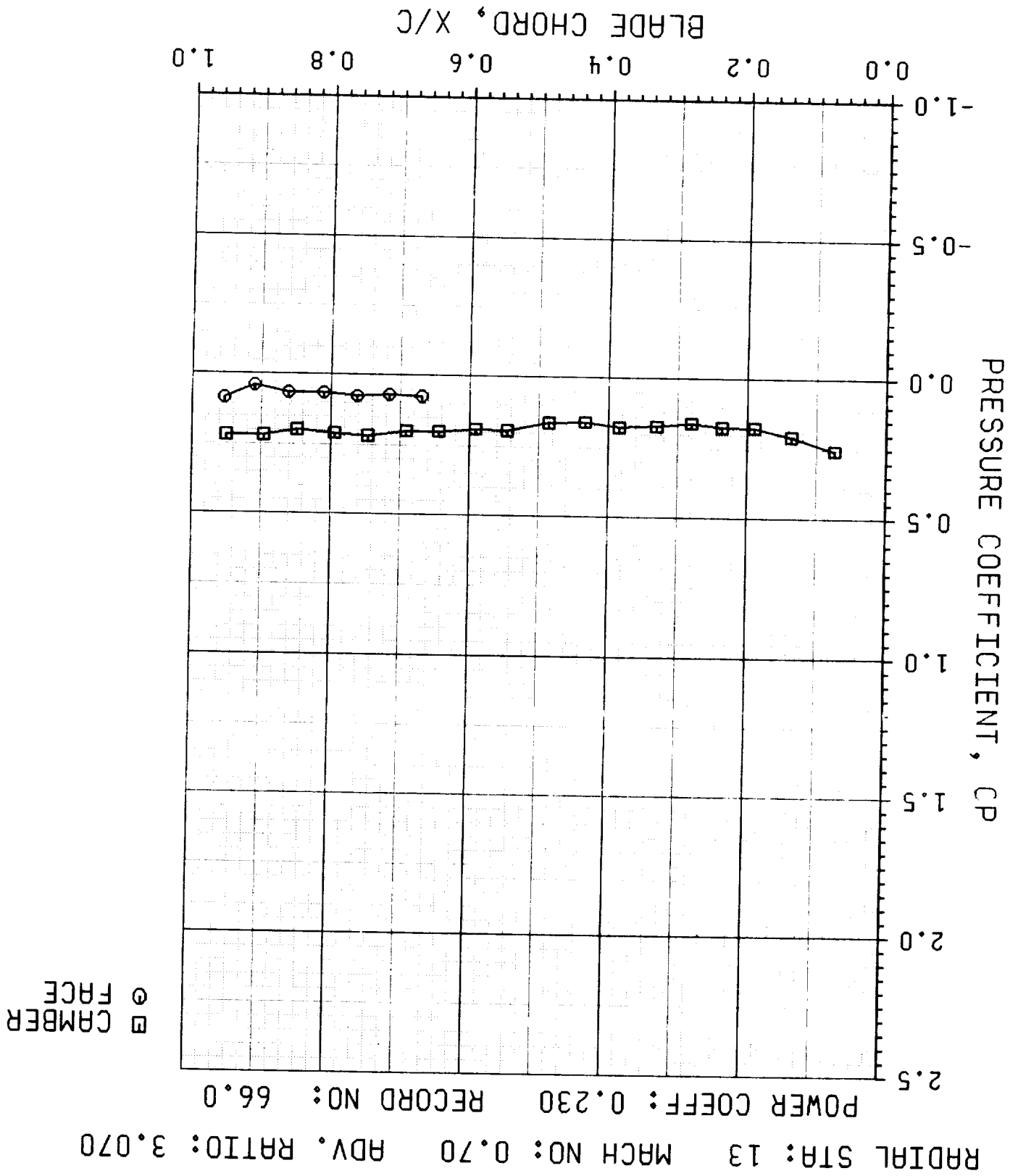
RECORD NUMBER: 127.0

RADIAL STATION: 12

TUNNEL STATIC PRESSURE, P0: 67620.0 PA, 9.807 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	56994.0	8.266	46719.5	6.776	-0.227
0.118	59150.5	8.579	46729.1	6.777	-0.181
0.160	59934.8	8.692	46732.1	6.778	-0.164
0.206	56708.5	8.225	46728.4	6.777	-0.234
0.262	56805.3	8.239	46727.4	6.777	-0.231
0.308	57481.8	8.337	46719.1	6.776	-0.217
0.361	58858.3	8.536	46730.1	6.777	-0.187
0.412	58264.6	8.450	46721.1	6.776	-0.200
0.460	58062.9	8.421	46718.5	6.775	-0.205
0.510	59839.7	8.679	46724.6	6.777	-0.167
0.561	59359.6	8.609	46733.8	6.778	-0.177
0.610	58656.8	8.507	46745.4	6.780	-0.192
0.657	58532.9	8.489	46737.7	6.778	-0.194
0.707	58055.9	8.420	46739.5	6.779	-0.205
0.760	58201.4	8.441	46738.4	6.779	-0.202
0.811	57959.6	8.406	46741.2	6.779	-0.207
0.862	58293.5	8.454	46743.2	6.779	-0.200
0.913	58166.2	8.436	46754.2	6.781	-0.202
0.960	58500.6	8.484	46756.8	6.781	-0.195
FACE					
0.065	66454.0	9.638	46708.2	6.774	-0.025
0.132	65696.0	9.528	46711.9	6.775	-0.041
0.202	64271.9	9.322	46702.9	6.773	-0.072
0.270	62602.7	9.079	46703.0	6.773	-0.107
0.335	63732.0	9.243	46699.7	6.773	-0.083
0.401	64989.0	9.426	46697.5	6.773	-0.056
0.468	66081.8	9.584	46697.0	6.773	-0.033
0.537	66243.8	9.608	46698.0	6.772	-0.029
0.594	66059.8	9.581	46704.5	6.774	-0.033
0.654	65756.8	9.537	46703.6	6.774	-0.040
0.707	65807.1	9.544	46715.7	6.775	-0.039
0.760	65689.6	9.527	46715.3	6.775	-0.041
0.802	66330.1	9.620	46711.2	6.775	-0.028
0.862	66361.9	9.625	46723.9	6.776	-0.027
0.912	66944.1	9.709	46720.1	6.776	-0.014
0.958	64600.6	9.369	46730.2	6.777	-0.065

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 66.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	284.0 K	51.5 F
STATIC PRESSURE:	67280.0 PA	9.758 PSI
AIR DENSITY:	0.8252 KG/M3	0.05152 LBF/FT3
SPEED OF SOUND:	337.85 M/S	1108.48 FT/S
INFLOW MACH NUMBER:	0.70	
INFLOW VELOCITY:	236.49 M/S	775.98 FT/S

## PROPFAN:

---

RADIAL STATION:	18	
ROTOR SPEED (RPM):	1688.0	
ADVANCE RATIO:	3.070	
POWER COEFFICIENT:	0.230	
BLADE ANGLE (@ X=41" STA):	55.1 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3689 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	0.999	

RUN DATE:	03-09-1987
RUN TIME:	17:37:27

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 66.0

RADIAL STATION: 18

TUNNEL STATIC PRESSURE, PO: 67280.0 PA, 9.758 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	55330.7	8.025	47044.5	6.823	-0.254
0.136	57647.8	8.361	47047.9	6.823	-0.205
0.189	59105.2	8.572	47026.2	6.820	-0.174
0.236	59137.7	8.577	47029.7	6.821	-0.173
0.280	59799.4	8.678	47032.1	6.821	-0.159
0.330	59256.6	8.594	47019.4	6.819	-0.171
0.384	59023.8	8.560	47022.6	6.820	-0.176
0.433	59810.9	8.675	47022.9	6.820	-0.159
0.485	59604.5	8.645	47012.1	6.818	-0.163
0.545	58227.6	8.445	47013.0	6.818	-0.193
0.591	58396.5	8.469	47014.8	6.819	-0.189
0.644	57918.5	8.400	47008.3	6.818	-0.199
0.691	57915.7	8.400	47005.2	6.817	-0.199
0.746	57059.0	8.275	47004.4	6.817	-0.217
0.794	57468.9	8.335	47011.9	6.818	-0.209
0.848	57988.8	8.410	47009.5	6.818	-0.198
0.896	57083.2	8.279	47009.7	6.818	-0.217
0.950	57036.1	8.272	47012.2	6.818	-0.218
FACE					
0.074	*****	*****	47022.6	6.820	*****
0.150	*****	*****	47015.1	6.819	*****
0.229	*****	*****	47020.6	6.820	*****
0.302	*****	*****	47003.8	6.817	*****
0.374	*****	*****	47003.9	6.817	*****
0.450	*****	*****	47000.2	6.817	*****
0.519	*****	*****	46989.9	6.815	*****
0.569	*****	*****	46989.7	6.815	*****
0.619	*****	*****	46991.8	6.815	*****
0.669	63770.8	9.249	46995.1	6.816	-0.075
0.716	63987.4	9.280	46995.3	6.816	-0.070
0.762	63729.8	9.243	46998.4	6.816	-0.076
0.810	64245.2	9.318	46987.0	6.815	-0.065
0.861	64237.2	9.316	46978.7	6.813	-0.065
0.910	65386.7	9.483	46997.6	6.816	-0.040
0.953	63281.8	9.178	46987.7	6.815	-0.085

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B12

(B12.1 through B12.10)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_{\infty} = 0.780 \pm 0.002$

Advance Ratio,  $J = 3.209 \pm 0.014$

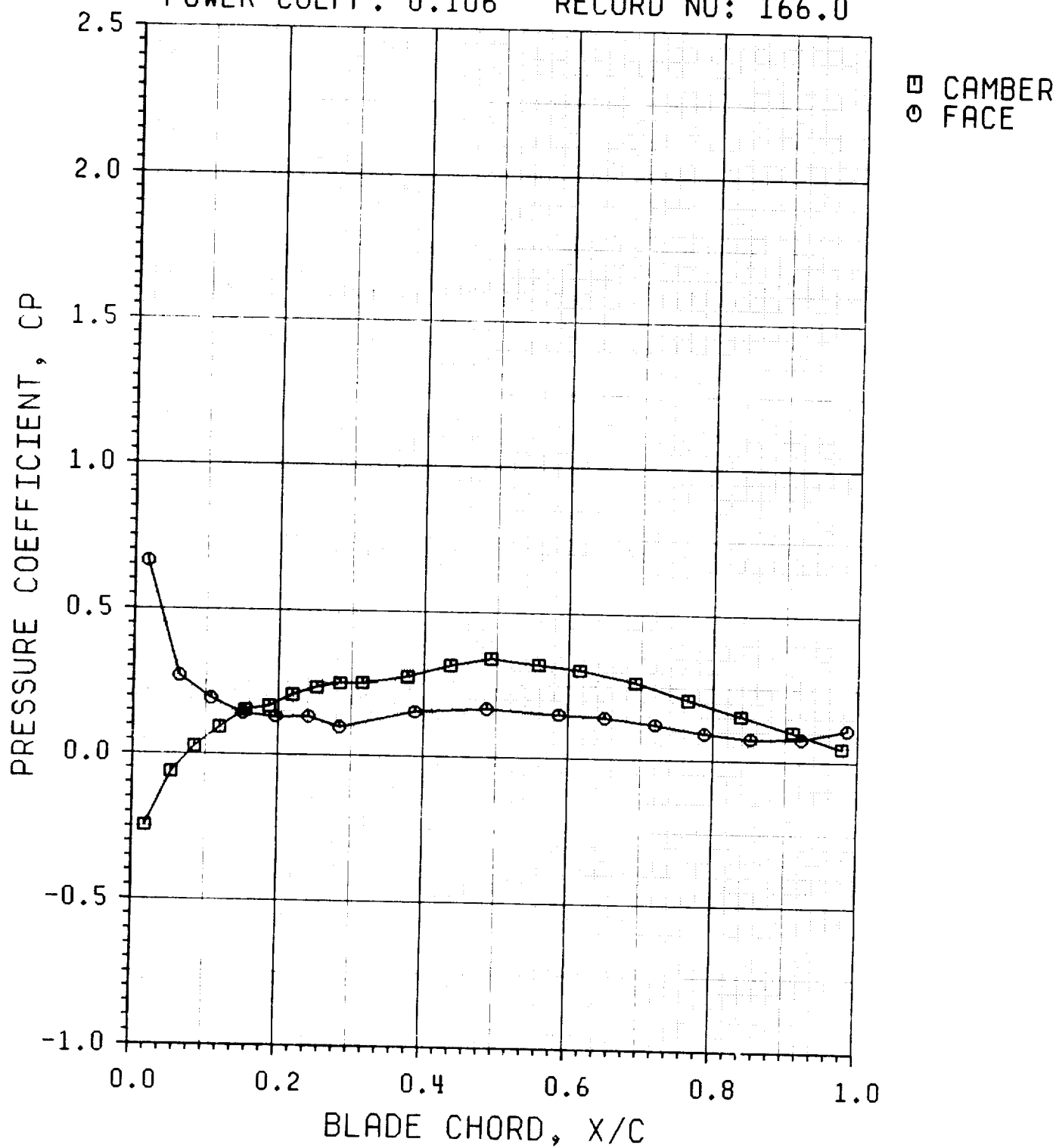
Power Coefficient,  $CP = 0.111 \pm 0.005$

Blade Angle,  $\beta = 54.5 \pm 1.3^{\circ}$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1 MACH NO: 0.78 ADV. RATIO: 3.195

POWER COEFF: 0.106 RECORD NO: 166.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 166.0

## WIND TUNNEL:

STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	64500.0 PA	9.355 PSI
AIR DENSITY:	0.8141 KG/M3	0.05082 LBF/FT3
SPEED OF SOUND:	833.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	259.78 M/S	852.35 FT/S

## PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1782.0	
ADVANCE RATIO:	3.195	
POWER COEFFICIENT:	0.106	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.310	
REL MACH NO. (@ MID CHORD):	0.816	

RUN DATE:	03-12-1987
RUN TIME:	17:53:37

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 166.0

RADIAL STATION: 1

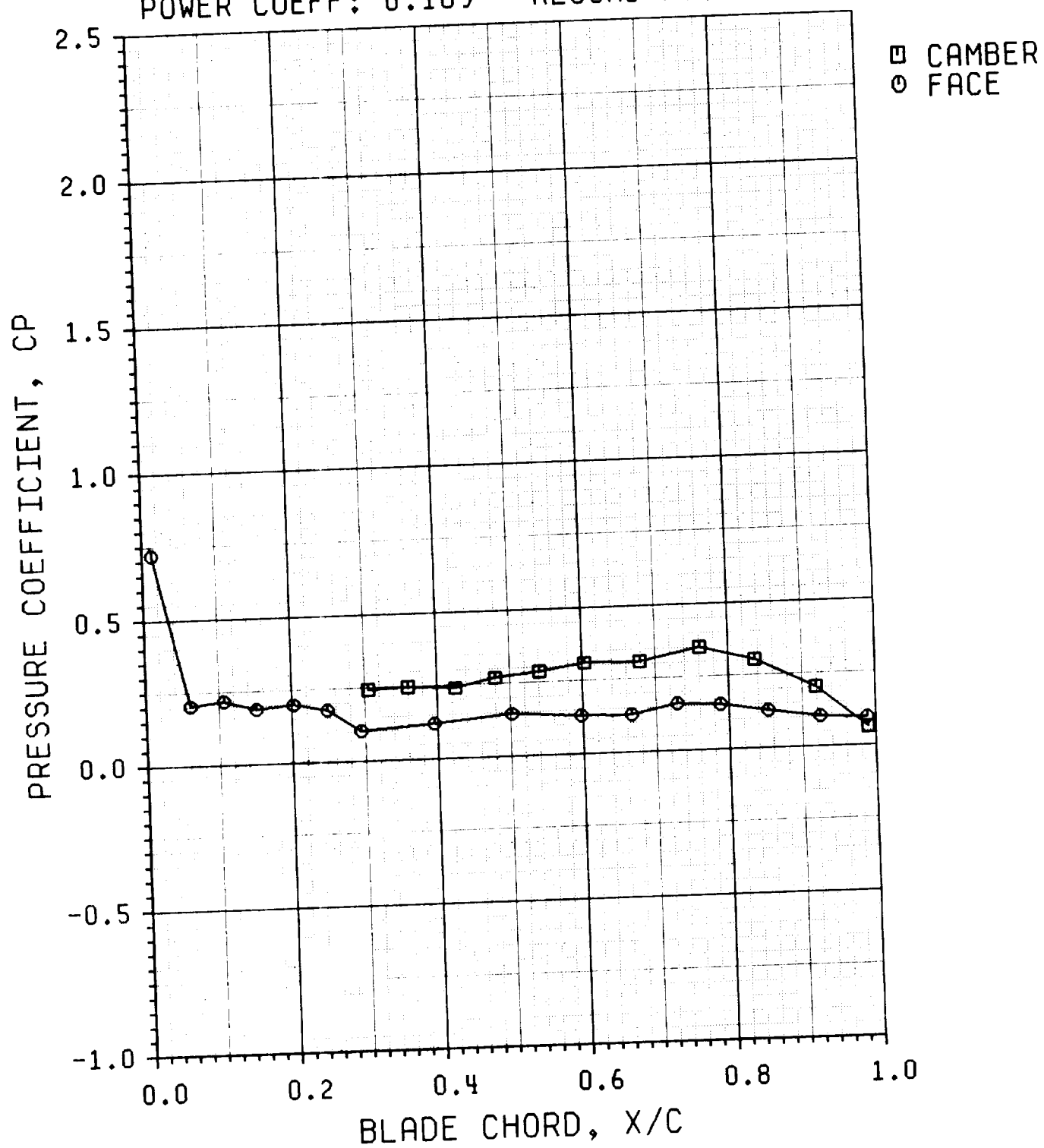
TUNNEL STATIC PRESSURE, PO: 64500.0 PA, 9.355 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	71741.4	10.405	29440.9	4.270	0.246
0.053	66372.5	9.626	29466.9	4.274	0.064
0.085	63750.4	9.246	29490.7	4.277	-0.025
0.119	61758.8	8.957	29520.9	4.281	-0.093
0.154	59986.3	8.693	29551.2	4.286	-0.154
0.187	59519.2	8.632	29585.8	4.291	-0.168
0.219	58359.8	8.464	29619.0	4.296	-0.207
0.252	57569.2	8.349	29651.7	4.300	-0.234
0.284	57114.0	8.283	29685.4	4.305	-0.249
0.315	57048.1	8.274	29728.8	4.311	-0.251
0.377	56333.3	8.170	29796.6	4.321	-0.274
0.436	55085.2	7.989	29875.4	4.333	-0.315
0.492	54324.1	7.879	29928.4	4.340	-0.340
0.558	54857.8	7.956	30036.8	4.356	-0.321
0.615	55338.0	8.026	30120.4	4.368	-0.304
0.692	56514.3	8.196	30224.9	4.384	-0.264
0.765	58184.3	8.439	30345.8	4.401	-0.208
0.838	59797.4	8.673	30452.3	4.417	-0.154
0.910	61418.9	8.908	30570.8	4.434	-0.101
0.978	63074.0	9.148	30679.6	4.450	-0.046
FACE					
0.018	45027.6	6.530	29453.6	4.272	-0.661
0.063	56542.1	8.200	29521.6	4.282	-0.270
0.107	58807.6	8.529	29570.7	4.289	-0.193
0.151	60287.7	8.744	29614.8	4.295	-0.142
0.196	60625.0	8.793	29662.8	4.302	-0.131
0.241	60539.6	8.780	29708.6	4.309	-0.133
0.284	61606.9	8.935	29749.8	4.315	-0.097
0.338	59896.6	8.687	29861.8	4.331	-0.154
0.487	59454.0	8.623	29979.6	4.348	-0.168
0.587	59955.6	8.696	30102.8	4.366	-0.151
0.650	60211.8	8.733	30177.3	4.377	-0.142
0.720	60830.6	8.822	30269.3	4.390	-0.121
0.788	61702.9	8.949	30368.3	4.404	-0.092
0.852	62190.9	9.020	30463.1	4.418	-0.076
0.922	62143.6	9.013	30571.5	4.434	-0.077
0.985	61114.9	8.864	30677.1	4.449	-0.110

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3    MACH NO: 0.78    ADV. RATIO: 3.205

POWER COEFF: 0.109    RECORD NO: 142.0



**LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST**

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**OPERATING PARAMETERS FOR RECORD NUMBER: 142.0**

**WIND TUNNEL:**

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STATIC TEMPERATURE:	274.0 K	33.5 F
STATIC PRESSURE:	64670.0 PA	9.379 PSI
AIR DENSITY:	0.8222 KG/M3	0.05183 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	258.84 M/S	849.25 FT/S

**PROPFAN:**

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RADIAL STATION:	3	
ROTOR SPEED (RPM):	1770.0	
ADVANCE RATIO:	3.205	
POWER COEFFICIENT:	0.109	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.569	
REL MACH NO. (@ MID CHORD):	0.898	

RUN DATE:	03-11-1987
RUN TIME:	22:07:04



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 142.0

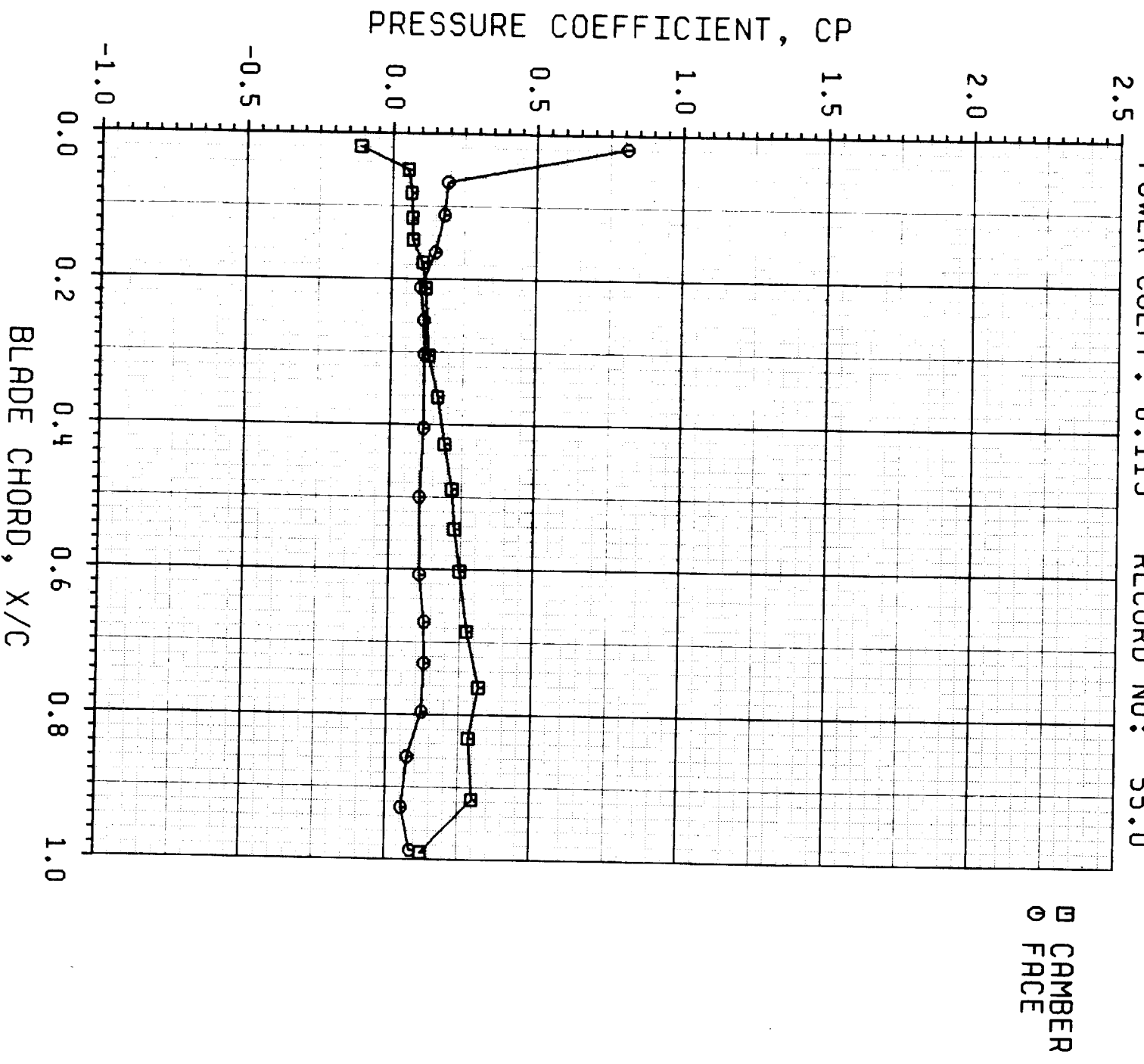
RADIAL STATION: 3

TUNNEL STATIC PRESSURE, PO: 64670.0 PA, 9.879 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	*****	*****	85682.6	5.168	*****
0.046	*****	*****	85637.6	5.169	*****
0.077	*****	*****	85683.2	5.168	*****
0.107	*****	*****	85642.2	5.169	*****
0.139	*****	*****	85645.8	5.170	*****
0.173	*****	*****	85648.8	5.170	*****
0.201	*****	*****	85668.8	5.172	*****
0.238	*****	*****	85677.0	5.174	*****
0.271	*****	*****	85696.8	5.177	*****
0.305	56025.7	8.126	85720.8	5.181	-0.242
0.360	55852.9	8.100	85755.8	5.186	-0.247
0.425	56120.4	8.139	85811.4	5.194	-0.239
0.480	55036.8	7.982	85854.8	5.200	-0.269
0.541	54427.8	7.894	85932.5	5.211	-0.285
0.603	53554.9	7.767	85997.0	5.221	-0.309
0.679	53575.8	7.770	86107.0	5.237	-0.307
0.761	51983.1	7.539	86222.0	5.253	-0.350
0.836	53662.2	7.783	86345.1	5.271	-0.303
0.919	57278.8	8.307	86485.9	5.292	-0.208
0.989	62415.2	9.052	86615.0	5.810	-0.062
FACE					
0.018	38982.5	5.654	85653.8	5.171	-0.720
0.061	57399.4	8.825	85668.6	5.172	-0.204
0.107	56888.9	8.251	85669.8	5.173	-0.218
0.151	57945.8	8.404	85680.1	5.175	-0.188
0.202	57562.8	8.848	85697.9	5.177	-0.199
0.248	58336.6	8.461	85714.6	5.180	-0.177
0.294	61026.2	8.851	85737.6	5.183	-0.102
0.395	60366.2	8.755	85801.8	5.192	-0.120
0.502	59509.5	8.631	85901.2	5.207	-0.144
0.597	59994.1	8.701	85992.2	5.220	-0.130
0.666	60037.7	8.707	86090.1	5.234	-0.128
0.729	58872.5	8.538	86158.6	5.244	-0.160
0.788	59150.1	8.579	86246.9	5.257	-0.152
0.853	60033.2	8.707	86357.0	5.273	-0.128
0.924	60959.5	8.841	86476.4	5.290	-0.102
0.988	61199.1	8.876	86604.2	5.309	-0.095

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 5    MACH NO: 0.78    ADV. RATIO: 3.207  
POWER COEFF: 0.113    RECORD NO: 55.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 55.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	276.0 K	37.1 F
STATIC PRESSURE:	64700.0 PA	9.384 PSI
AIR DENSITY:	0.8166 KG/M3	0.05098 LBF/FT3
SPEED OF SOUND:	333.05 M/S	1092.75 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	259.78 M/S	852.35 FT/S

## PROPFAN:

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RADIAL STATION:	5	
ROTOR SPEED (RPM):	1775.0	
ADVANCE RATIO:	3.207	
POWER COEFFICIENT:	0.118	
BLADE ANGLE (@ X=41" STA):	55.0 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.739	
REL MACH NO. (@ MID CHORD):	0.963	

RUN DATE:	03-06-1987
RUN TIME:	18:45:36

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 55.0

RADIAL STATION: 5

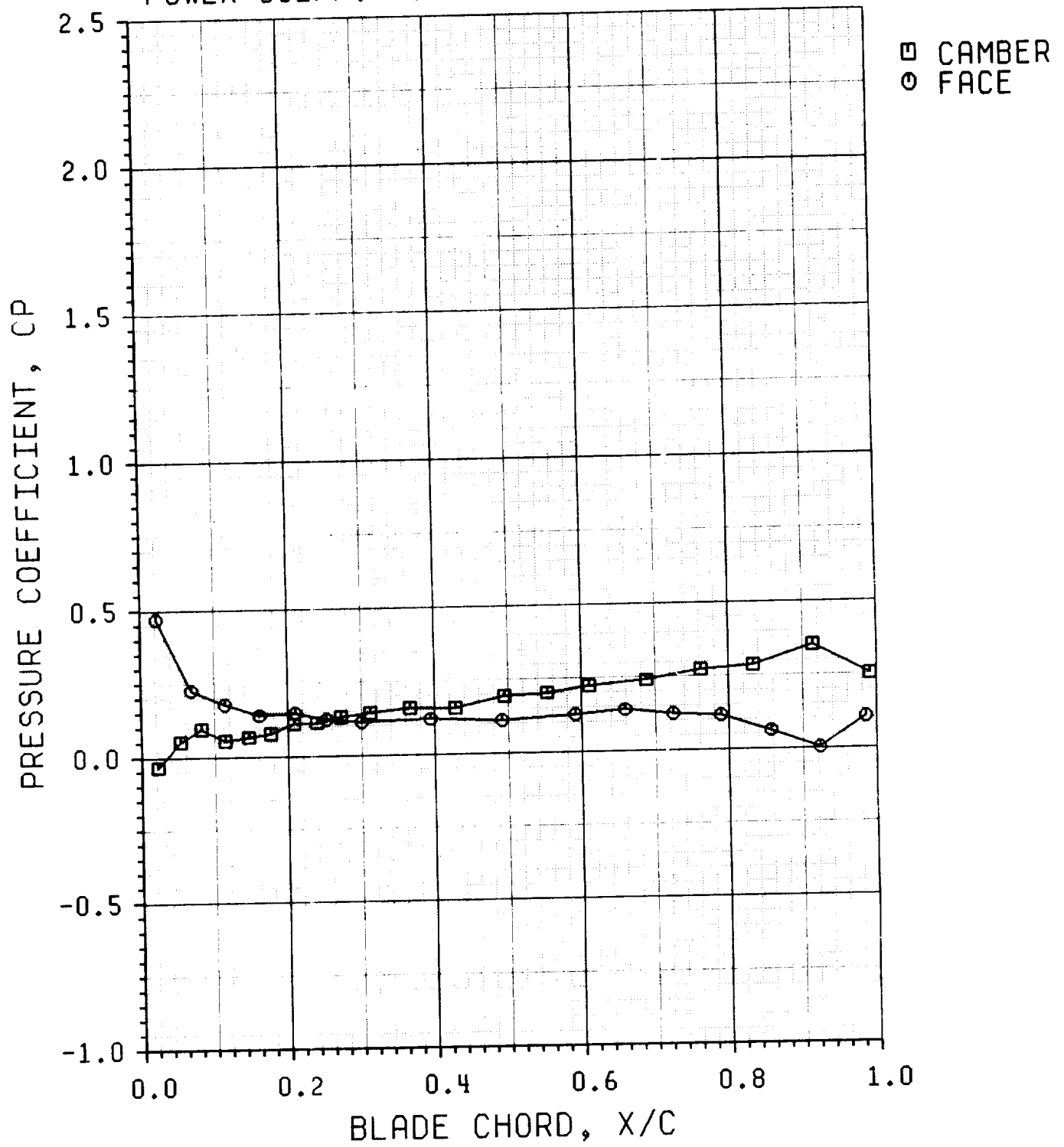
TUNNEL STATIC PRESSURE, PO: 64700.0 PA, 9.384 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	69303.8	10.051	41682.2	6.045	0.110
0.050	62448.6	9.057	41662.7	6.042	-0.054
0.082	62024.9	8.996	41641.1	6.039	-0.064
0.116	61830.9	8.968	41626.5	6.037	-0.069
0.146	61758.7	8.957	41613.7	6.035	-0.071
0.177	60303.0	8.746	41605.5	6.034	-0.106
0.212	59801.0	8.673	41600.0	6.033	-0.118
0.241	*****	*****	41597.9	6.033	*****
0.273	*****	*****	41597.3	6.033	*****
0.305	59277.3	8.597	41598.7	6.033	-0.130
0.362	57868.9	8.393	41614.1	6.035	-0.164
0.427	56778.7	8.235	41641.1	6.039	-0.190
0.489	55617.8	8.066	41666.8	6.043	-0.218
0.544	55171.0	8.002	41706.0	6.049	-0.228
0.602	54327.1	7.879	41763.7	6.057	-0.248
0.685	53225.6	7.719	41844.6	6.069	-0.274
0.762	51423.3	7.458	41935.7	6.082	-0.317
0.832	52732.6	7.648	42031.4	6.096	-0.285
0.917	52098.5	7.556	42165.1	6.115	-0.299
0.990	59514.3	8.632	42288.6	6.133	-0.123
FACE					
0.019	31024.0	4.499	41704.4	6.048	-0.807
0.067	56660.8	8.218	41672.9	6.044	-0.193
0.112	57157.1	8.290	41642.4	6.040	-0.181
0.163	58474.6	8.481	41630.0	6.038	-0.150
0.211	60545.8	8.781	41626.9	6.037	-0.100
0.256	60038.6	8.708	41625.3	6.037	-0.112
0.303	59926.8	8.691	41624.8	6.037	-0.115
0.405	59871.1	8.683	41638.7	6.039	-0.116
0.500	60364.1	8.755	41680.2	6.045	-0.104
0.607	60225.8	8.735	41771.3	6.058	-0.107
0.672	59442.2	8.621	41825.2	6.066	-0.126
0.729	59317.6	8.603	41895.7	6.076	-0.128
0.796	59630.8	8.648	41974.1	6.088	-0.121
0.858	61655.1	8.942	42055.0	6.099	-0.072
0.928	62427.1	9.054	42166.7	6.116	-0.054
0.987	61057.9	8.855	42272.7	6.131	-0.086

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6 MACH NO: 0.78 ADV. RATIO: 3.198

POWER COEFF: 0.109 RECORD NO: 193.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 193.0

WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	64290.0 PA	9.324 PSI
AIR DENSITY:	0.8056 KG/M3	0.05029 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	260.72 M/S	855.43 FT/S

PROPFAN:

RADIAL STATION:	6	
ROTOR SPEED (RPM):	1785.0	
ADVANCE RATIO:	3.198	
POWER COEFFICIENT:	0.109	
BLADE ANGLE (@ X=41" STA):	53.2 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3700 M	53.94 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.995	

RUN DATE:	03-13-1987
RUN TIME:	15:09:11

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 193.0

RADIAL STATION: 6

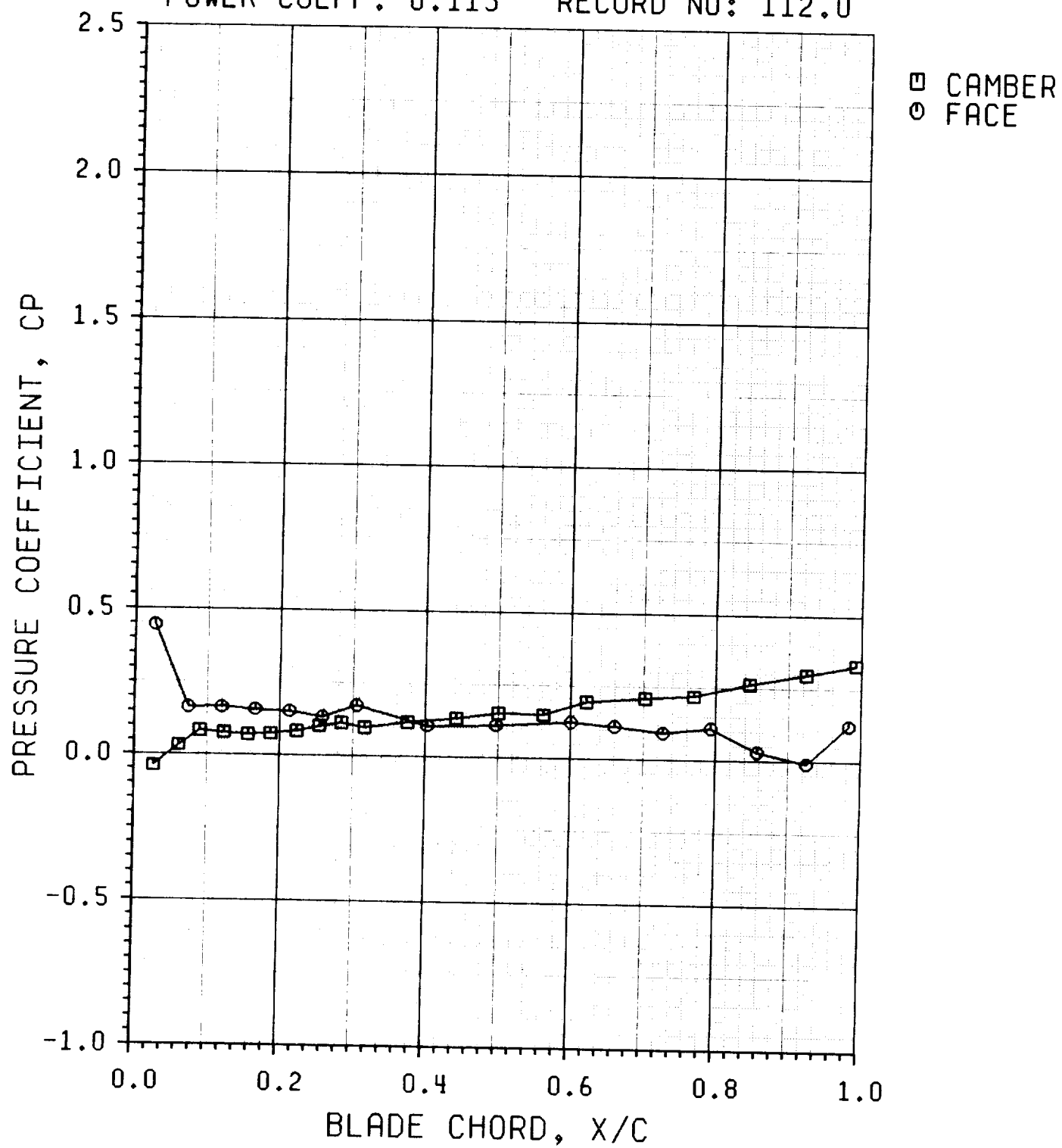
TUNNEL STATIC PRESSURE, PO: 64290.0 PA, 9.324 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	65841.9	9.549	44277.0	6.422	0.085
0.053	61934.1	8.982	44260.6	6.419	-0.053
0.082	60066.4	8.712	44247.8	6.417	-0.095
0.114	61849.7	8.970	44247.4	6.417	-0.055
0.146	61858.8	8.899	44240.2	6.416	-0.066
0.176	60872.8	8.829	44219.1	6.418	-0.077
0.208	59454.5	8.623	44216.2	6.418	-0.109
0.239	59378.4	8.612	44221.0	6.413	-0.111
0.272	58551.9	8.492	44218.7	6.418	-0.180
0.312	57976.2	8.408	44226.1	6.414	-0.143
0.366	57361.5	8.319	44240.2	6.416	-0.157
0.428	57420.6	8.328	44266.2	6.420	-0.155
0.495	55728.5	8.082	44289.8	6.428	-0.193
0.553	55387.7	8.033	44321.0	6.428	-0.201
0.610	54398.8	7.890	44361.4	6.434	-0.223
0.688	53688.2	7.787	44435.2	6.445	-0.289
0.762	52182.4	7.568	44518.3	6.457	-0.272
0.838	51561.5	7.478	44608.4	6.470	-0.285
0.914	48514.2	7.036	44715.8	6.485	-0.353
0.991	52956.8	7.680	44825.4	6.501	-0.253
FACE					
0.022	43457.8	6.803	44288.8	6.423	-0.470
0.069	54280.6	7.872	44264.0	6.420	-0.226
0.114	56399.0	8.180	44246.4	6.417	-0.178
0.161	58130.2	8.431	44227.9	6.414	-0.139
0.210	57894.5	8.397	44224.9	6.414	-0.145
0.252	58875.0	8.539	44219.4	6.413	-0.122
0.300	59316.5	8.603	44212.3	6.412	-0.112
0.394	59023.5	8.560	44234.6	6.415	-0.119
0.491	59411.9	8.617	44267.0	6.420	-0.110
0.591	58748.5	8.520	44335.9	6.430	-0.125
0.659	58134.9	8.431	44382.0	6.437	-0.139
0.724	58805.6	8.529	44447.4	6.446	-0.123
0.789	59161.2	8.580	44511.5	6.456	-0.115
0.857	61586.7	8.932	44610.1	6.470	-0.061
0.923	64141.4	9.303	44704.1	6.484	-0.003
0.985	59589.3	8.642	44799.2	6.497	-0.105

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7 MACH NO: 0.78 ADV. RATIO: 3.216

POWER COEFF: 0.113 RECORD NO: 112.0





# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 112.0

## WIND TUNNEL:

STATIC TEMPERATURE:	274.0 K	33.5 F
STATIC PRESSURE:	64500.0 PA	9.355 PSI
AIR DENSITY:	0.8200 KG/M3	0.05119 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	258.84 M/S	849.25 FT/S

## PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1764.0	
ADVANCE RATIO:	3.216	
POWER COEFFICIENT:	0.118	
BLADE ANGLE (@ X=41" STA):	55.7 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	1.019	

RUN DATE:	03-10-1987
RUN TIME:	21:01:45

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 112.0

RADIAL STATION: 7

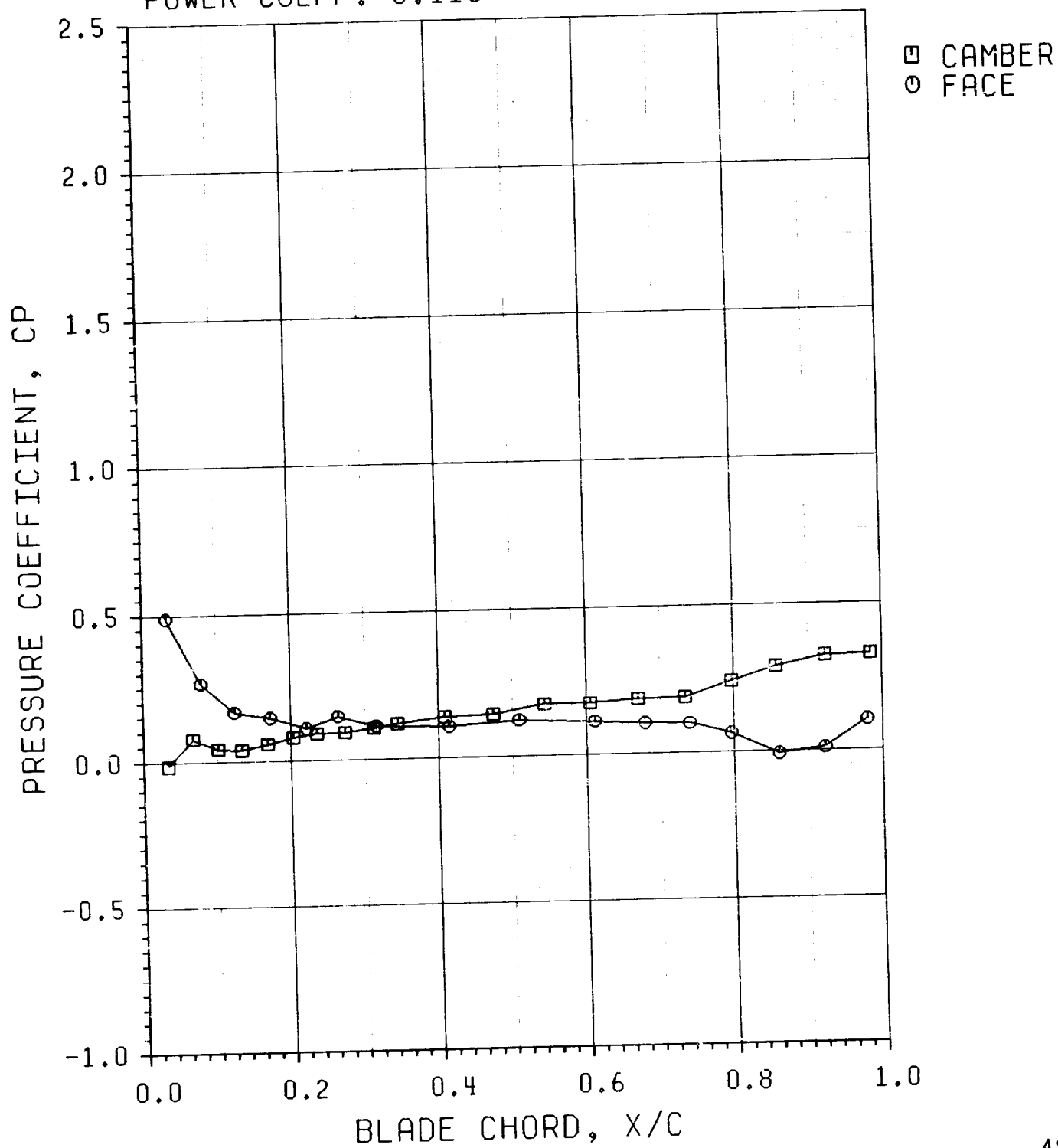
TUNNEL STATIC PRESSURE, PO: 64500.0 PA, 9.355 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	66428.7	9.684	46708.0	6.774	0.041
0.061	63046.0	9.144	46707.8	6.774	-0.081
0.090	60649.4	8.796	46707.9	6.774	-0.082
0.128	60968.5	8.842	46701.4	6.778	-0.076
0.156	61221.9	8.879	46694.8	6.772	-0.070
0.187	61053.5	8.855	46688.3	6.771	-0.074
0.223	60616.6	8.791	46692.8	6.772	-0.083
0.254	59789.9	8.671	46702.7	6.773	-0.101
0.284	59276.8	8.597	46700.5	6.773	-0.112
0.316	59978.8	8.699	46705.5	6.774	-0.097
0.375	59037.1	8.562	46712.6	6.775	-0.117
0.442	58847.5	8.462	46731.0	6.778	-0.182
0.500	57343.8	8.317	46762.5	6.782	-0.153
0.562	57512.5	8.341	46795.3	6.787	-0.149
0.621	55359.2	8.029	46822.9	6.791	-0.195
0.702	54673.1	7.929	46892.1	6.801	-0.210
0.769	54208.4	7.862	46937.9	6.808	-0.219
0.846	52180.9	7.568	47001.9	6.817	-0.262
0.924	50450.5	7.317	47080.9	6.828	-0.298
0.992	48386.6	7.090	47150.5	6.838	-0.381
FACE					
0.027	43762.7	6.347	46701.1	6.773	-0.444
0.074	56899.0	8.252	46701.0	6.773	-0.163
0.120	56860.5	8.247	46678.5	6.770	-0.164
0.166	57232.2	8.301	46689.2	6.771	-0.156
0.213	57463.1	8.334	46666.9	6.768	-0.151
0.258	58326.1	8.459	46676.5	6.770	-0.132
0.305	56482.6	8.192	46681.7	6.770	-0.172
0.402	59565.8	8.639	46701.6	6.773	-0.106
0.497	59313.2	8.602	46740.1	6.779	-0.111
0.600	58672.2	8.509	46781.4	6.785	-0.125
0.660	59250.9	8.593	46814.0	6.790	-0.112
0.727	60148.6	8.724	46868.5	6.797	-0.093
0.793	59347.3	8.607	46928.9	6.806	-0.110
0.857	63074.1	9.148	46993.2	6.816	-0.030
0.925	64963.9	9.422	47062.7	6.826	0.010
0.983	58675.6	8.510	47133.8	6.836	-0.124

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8 MACH NO: 0.78 ADV. RATIO: 3.207

POWER COEFF: 0.110 RECORD NO: 179.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST ---

OPERATING PARAMETERS FOR RECORD NUMBER: 179.0

## WIND TUNNEL:

STATIC TEMPERATURE:	273.0 K	31.7 F
STATIC PRESSURE:	64580.0 PA	9.366 PSI
AIR DENSITY:	0.8240 KG/M3	0.05144 LBF/FT3
SPEED OF SOUND:	331.24 M/S	1086.80 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	258.37 M/S	847.70 FT/S

## PROPFAN:

RADIAL STATION:	8	
ROTOR SPEED (RPM):	1765.0	
ADVANCE RATIO:	3.207	
POWER COEFFICIENT:	0.110	
BLADE ANGLE (@ X=41" STA):	54.7 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3692 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	1.042	

RUN DATE:	03-12-1987
RUN TIME:	21:29:56

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

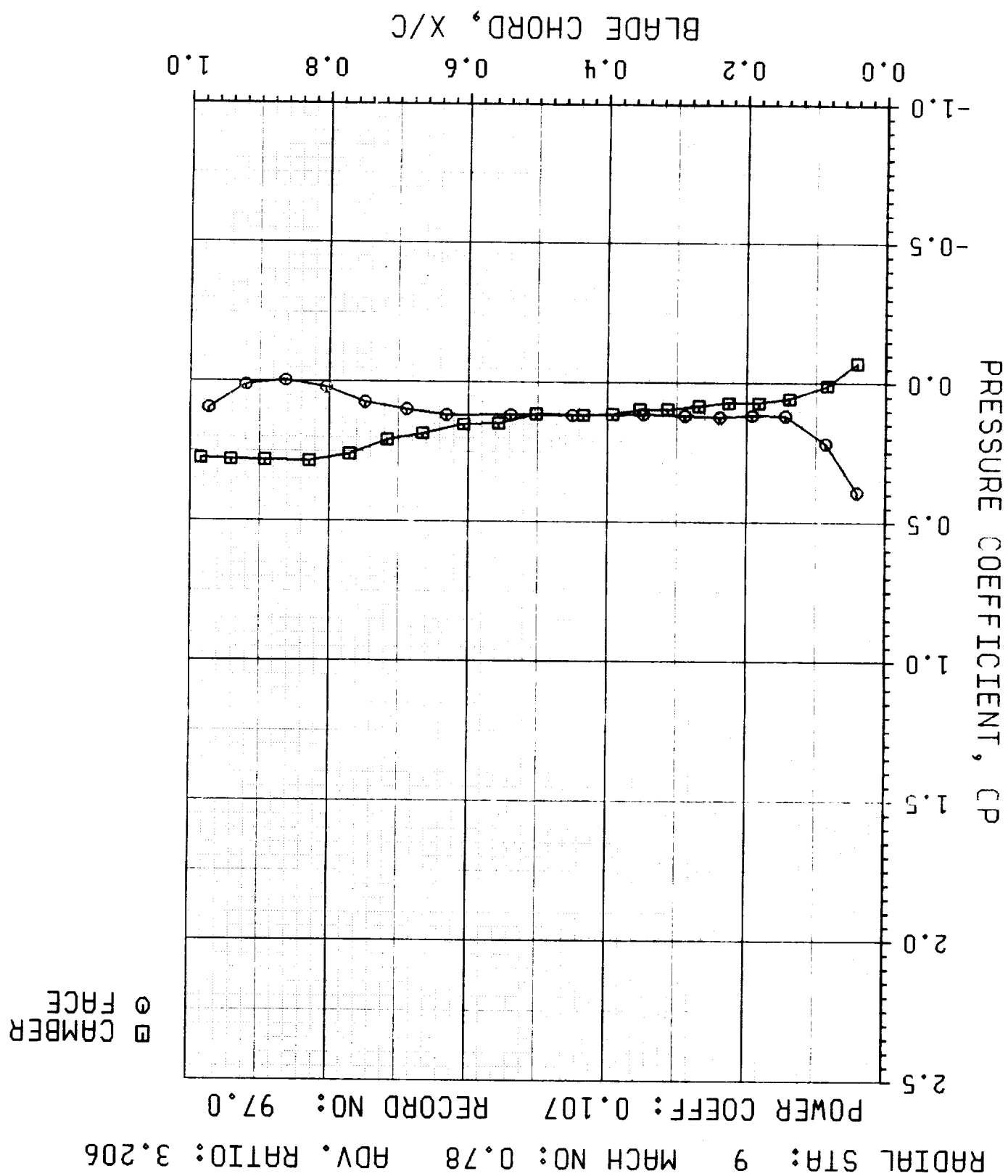
RECORD NUMBER: 179.0

RADIAL STATION: 8

TUNNEL STATIC PRESSURE, PO: 64580.0 PA, 9.366 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	65304.0	9.471	48946.3	7.099	0.015
0.067	60871.0	8.828	48943.5	7.098	-0.076
0.101	62587.2	9.077	48939.4	7.098	-0.041
0.133	62788.6	9.106	48939.1	7.098	-0.037
0.168	61820.9	8.966	48952.0	7.100	-0.056
0.203	60766.9	8.813	48945.3	7.099	-0.078
0.235	60244.5	8.737	48941.6	7.098	-0.089
0.273	60123.5	8.720	48956.1	7.100	-0.091
0.312	59489.2	8.628	48966.6	7.102	-0.104
0.344	58830.2	8.532	48971.3	7.102	-0.117
0.408	57799.0	8.383	48990.0	7.105	-0.138
0.474	57574.4	8.350	49007.7	7.108	-0.143
0.543	56033.6	8.127	49028.0	7.111	-0.174
0.605	56058.2	8.130	49067.4	7.116	-0.174
0.670	55488.7	8.048	49099.4	7.121	-0.185
0.734	55362.8	8.029	49182.8	7.126	-0.188
0.797	52784.9	7.656	49185.8	7.134	-0.240
0.857	50431.7	7.314	49211.0	7.137	-0.288
0.923	48786.6	7.068	49279.3	7.147	-0.322
0.984	48511.2	7.036	49318.6	7.152	-0.326
FACE					
0.033	40768.5	5.918	48930.4	7.097	-0.487
0.079	51544.3	7.476	48925.1	7.096	-0.266
0.124	56459.1	8.188	48931.4	7.097	-0.166
0.172	57507.1	8.340	48921.5	7.095	-0.145
0.221	59315.0	8.603	48912.9	7.094	-0.108
0.264	57450.1	8.332	48922.2	7.095	-0.146
0.315	59166.9	8.581	48929.7	7.096	-0.111
0.414	59439.9	8.621	48954.8	7.100	-0.105
0.509	58640.4	8.505	48984.7	7.104	-0.121
0.611	59127.7	8.575	49033.8	7.112	-0.111
0.679	59588.9	8.642	49064.3	7.116	-0.102
0.740	59697.9	8.658	49098.9	7.121	-0.099
0.796	61476.4	8.916	49185.6	7.126	-0.063
0.860	65080.3	9.439	49182.6	7.133	0.010
0.922	64154.3	9.304	49250.5	7.143	-0.009
0.979	59564.4	8.639	49299.1	7.150	-0.102

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 97.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	281.0 K	46.1 F
STATIC PRESSURE:	64350.0 PA	9.333 PSI
AIR DENSITY:	0.7977 KG/M3	0.04980 LBF/FT3
SPEED OF SOUND:	336.06 M/S	1102.61 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	262.12 M/S	860.03 FT/S

## PROPFAN:

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RADIAL STATION:	9	
ROTOR SPEED (RPM):	1792.0	
ADVANCE RATIO:	8.206	
POWER COEFFICIENT:	0.107	
BLADE ANGLE (@ X=41" STA):	55.7 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	1.060	

RUN DATE:	03-10-1987
RUN TIME:	16:15:33

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 97.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, PO: 64850.0 PA, 9.333 PSI

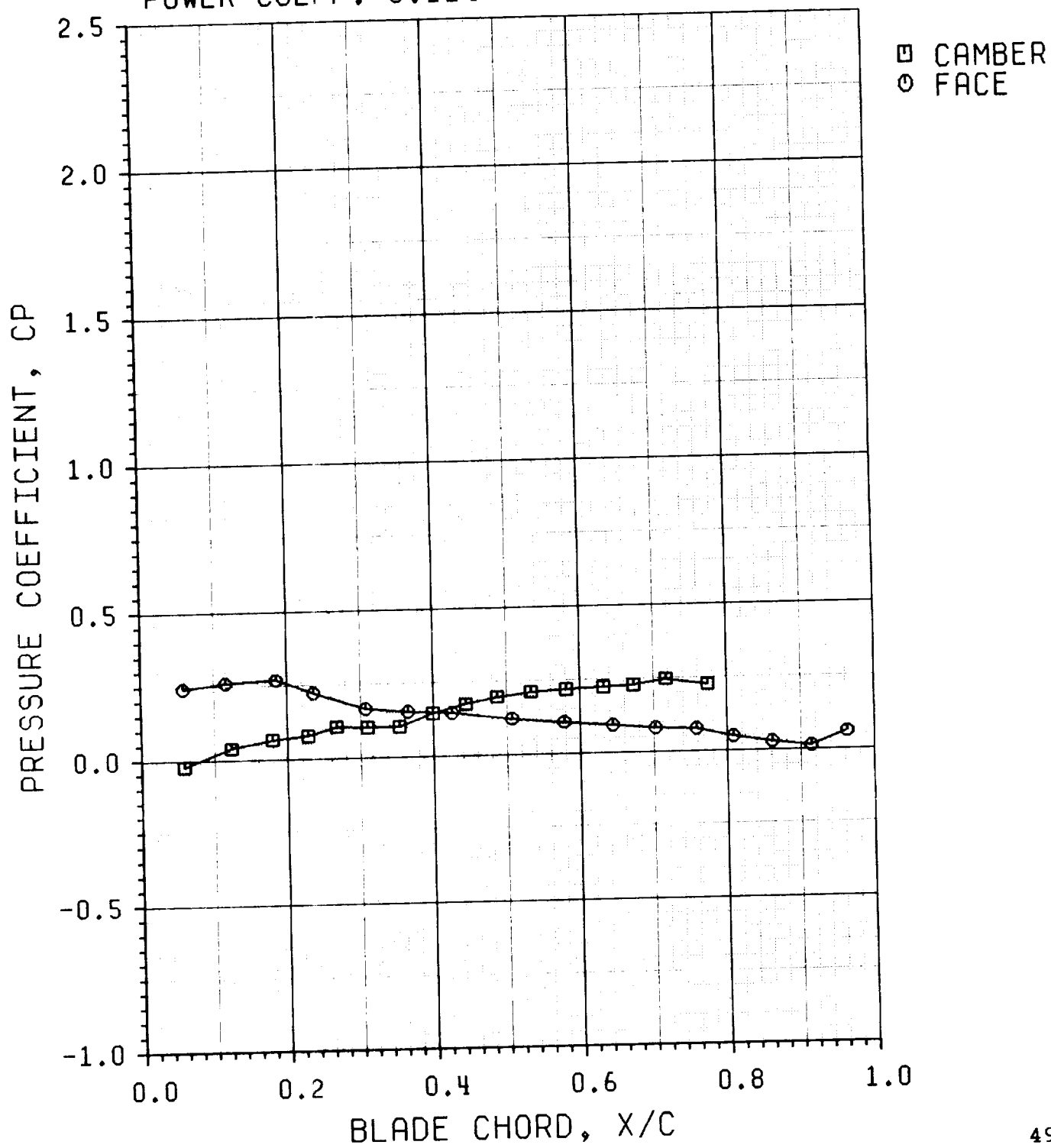
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	68038.9	9.868	50550.1	7.331	0.073
0.084	63896.5	9.267	50557.1	7.332	-0.009
0.138	61495.2	8.919	50556.8	7.332	-0.056
0.182	60750.1	8.811	50552.5	7.332	-0.071
0.225	60769.2	8.814	50562.2	7.333	-0.071
0.268	60135.2	8.722	50550.0	7.331	-0.083
0.313	59609.1	8.645	50557.9	7.333	-0.094
0.353	59570.3	8.640	50558.8	7.333	-0.095
0.392	58649.9	8.506	50568.0	7.334	-0.113
0.434	58482.9	8.482	50569.1	7.334	-0.116
0.502	58672.1	8.509	50581.5	7.336	-0.112
0.556	56844.9	8.244	50594.3	7.338	-0.148
0.606	56706.9	8.224	50617.2	7.341	-0.151
0.665	55046.6	7.984	50618.6	7.341	-0.184
0.716	53855.1	7.811	50636.6	7.344	-0.207
0.770	51181.2	7.423	50645.5	7.345	-0.260
0.828	49896.2	7.237	50672.6	7.349	-0.285
0.892	50039.1	7.257	50690.9	7.352	-0.282
0.941	50100.8	7.266	50706.6	7.354	-0.281
0.984	50375.5	7.306	50715.9	7.355	-0.276
FACE					
0.041	44549.3	6.461	50541.4	7.330	-0.392
0.086	53391.7	7.744	50548.2	7.330	-0.217
0.144	58401.1	8.470	50533.5	7.329	-0.118
0.192	58488.9	8.483	50532.3	7.329	-0.116
0.238	58161.8	8.435	50530.9	7.329	-0.122
0.288	58370.6	8.466	50532.5	7.329	-0.118
0.348	58672.3	8.509	50538.3	7.330	-0.112
0.450	58448.1	8.477	50541.7	7.330	-0.117
0.539	58464.4	8.479	50570.5	7.334	-0.116
0.631	58415.3	8.472	50581.7	7.336	-0.117
0.688	59440.4	8.621	50600.1	7.339	-0.097
0.748	60677.8	8.800	50612.1	7.340	-0.073
0.804	63327.8	9.185	50641.9	7.345	-0.020
0.863	64541.2	9.361	50658.2	7.347	0.004
0.920	63768.8	9.249	50677.6	7.350	-0.011
0.973	59562.3	8.638	50699.8	7.353	-0.094

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 11    MACH NO: 0.78    ADV. RATIO: 3.214

POWER COEFF: 0.114    RECORD NO: 83.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 83.0

WIND TUNNEL:

STATIC TEMPERATURE:	274.0 K	83.5 F
STATIC PRESSURE:	64420.0 PA	9.348 PSI
AIR DENSITY:	0.8190 KG/M3	0.05113 LBF/FT3
SPEED OF SOUND:	331.85 M/S	1088.79 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	258.84 M/S	849.25 FT/S

PROPFAN:

RADIAL STATION:	11	
ROTOR SPEED (RPM):	1765.0	
ADVANCE RATIO:	3.214	
POWER COEFFICIENT:	0.114	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	1.078	

RUN DATE:	03-09-1987
RUN TIME:	22:30:51

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 88.0

RADIAL STATION: 11

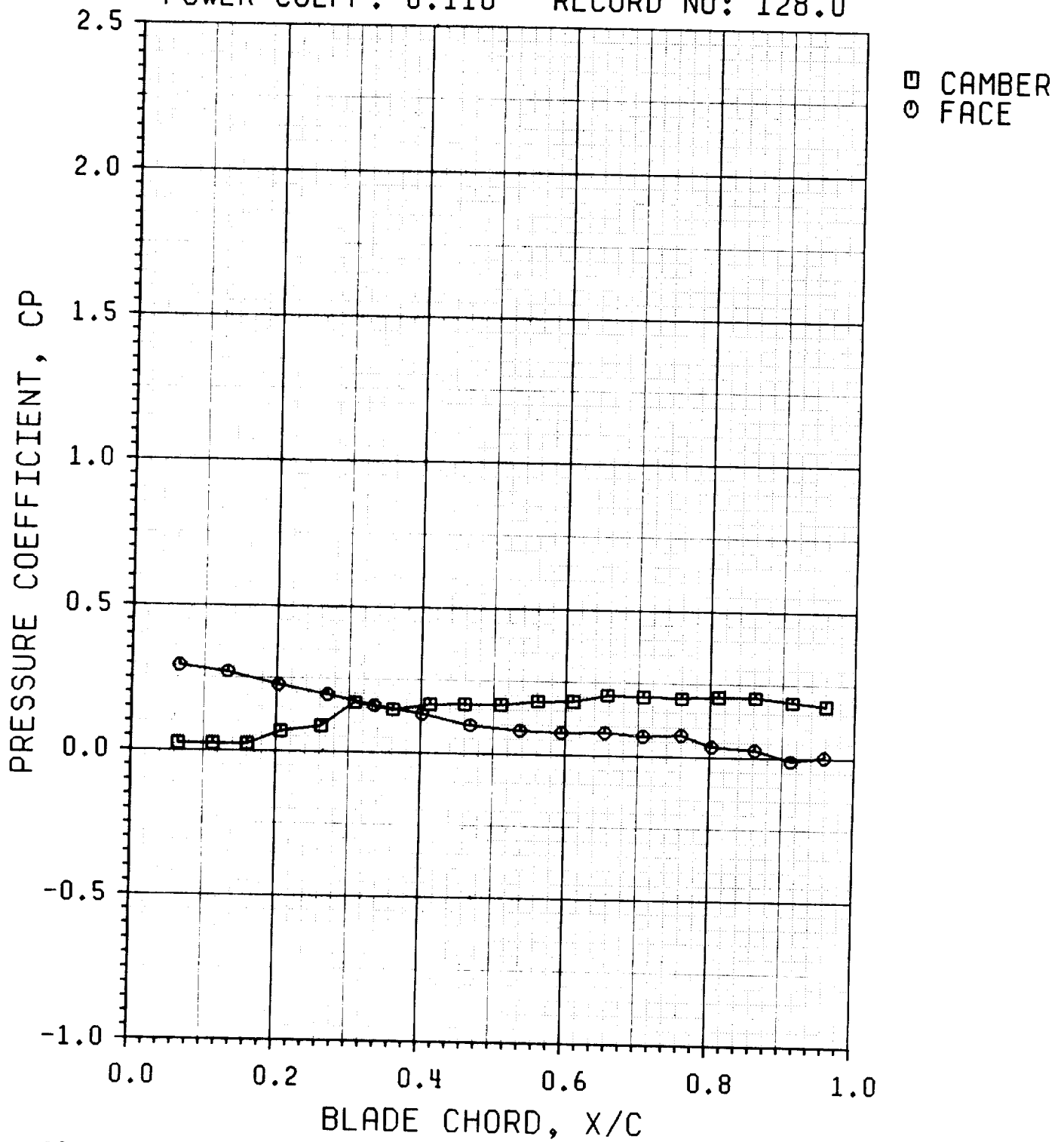
TUNNEL STATIC PRESSURE, PO: 64420.0 PA, 9.348 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	65644.7	9.521	52849.5	7.592	0.023
0.128	62370.4	9.046	52864.5	7.595	-0.089
0.179	60955.4	8.841	52871.8	7.596	-0.066
0.228	60846.8	8.752	52872.0	7.596	-0.078
0.267	58867.4	8.538	52875.4	7.596	-0.106
0.309	59040.8	8.563	52864.6	7.595	-0.103
0.353	59061.7	8.566	52865.7	7.595	-0.102
0.399	56848.9	8.245	52866.5	7.595	-0.145
0.444	56329.0	8.025	52870.1	7.595	-0.174
0.487	54157.1	7.855	52877.8	7.596	-0.196
0.533	53362.5	7.739	52886.5	7.598	-0.211
0.581	53010.8	7.688	52891.1	7.598	-0.218
0.632	52779.9	7.655	52894.8	7.599	-0.222
0.678	52510.2	7.616	52400.0	7.600	-0.227
0.717	51518.9	7.472	52892.6	7.599	-0.246
0.774	52565.4	7.624	52405.8	7.600	-0.226
0.822	*****	*****	52406.6	7.601	*****
0.875	*****	*****	52409.2	7.601	*****
0.928	*****	*****	52438.8	7.605	*****
0.974	*****	*****	52437.1	7.605	*****
FACE					
0.058	51708.4	7.499	52387.6	7.591	-0.243
0.116	50806.5	7.369	52389.8	7.591	-0.260
0.185	50860.9	7.304	52327.5	7.589	-0.269
0.236	52803.8	7.658	52386.7	7.591	-0.222
0.307	55798.0	8.092	52331.4	7.590	-0.165
0.365	56401.7	8.180	52331.2	7.590	-0.153
0.425	56829.8	8.242	52333.3	7.590	-0.145
0.507	58102.9	8.427	52327.2	7.589	-0.121
0.578	58866.0	8.537	52340.5	7.591	-0.106
0.644	59564.5	8.639	52349.5	7.592	-0.093
0.702	60234.5	8.786	52349.6	7.592	-0.080
0.758	60511.3	8.776	52363.8	7.594	-0.075
0.808	61961.9	8.986	52372.6	7.596	-0.047
0.861	62942.8	9.129	52378.7	7.597	-0.028
0.914	63803.8	9.254	52386.8	7.598	-0.012
0.963	61825.2	8.894	52397.1	7.599	-0.059

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12 MACH NO: 0.78 ADV. RATIO: 3.208

POWER COEFF: 0.110 RECORD NO: 128.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 128.0

## WIND TUNNEL:

---

STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	64480.0 PA	9.352 PSI
AIR DENSITY:	0.8168 KG/M3	0.05099 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	259.31 M/S	850.80 FT/S

## PROPFAN:

---

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1772.0	
ADVANCE RATIO:	3.208	
POWER COEFFICIENT:	0.110	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3685 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	1.084	

RUN DATE:	03-11-1987
RUN TIME:	18:26:29

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 128.0

RADIAL STATION: 12

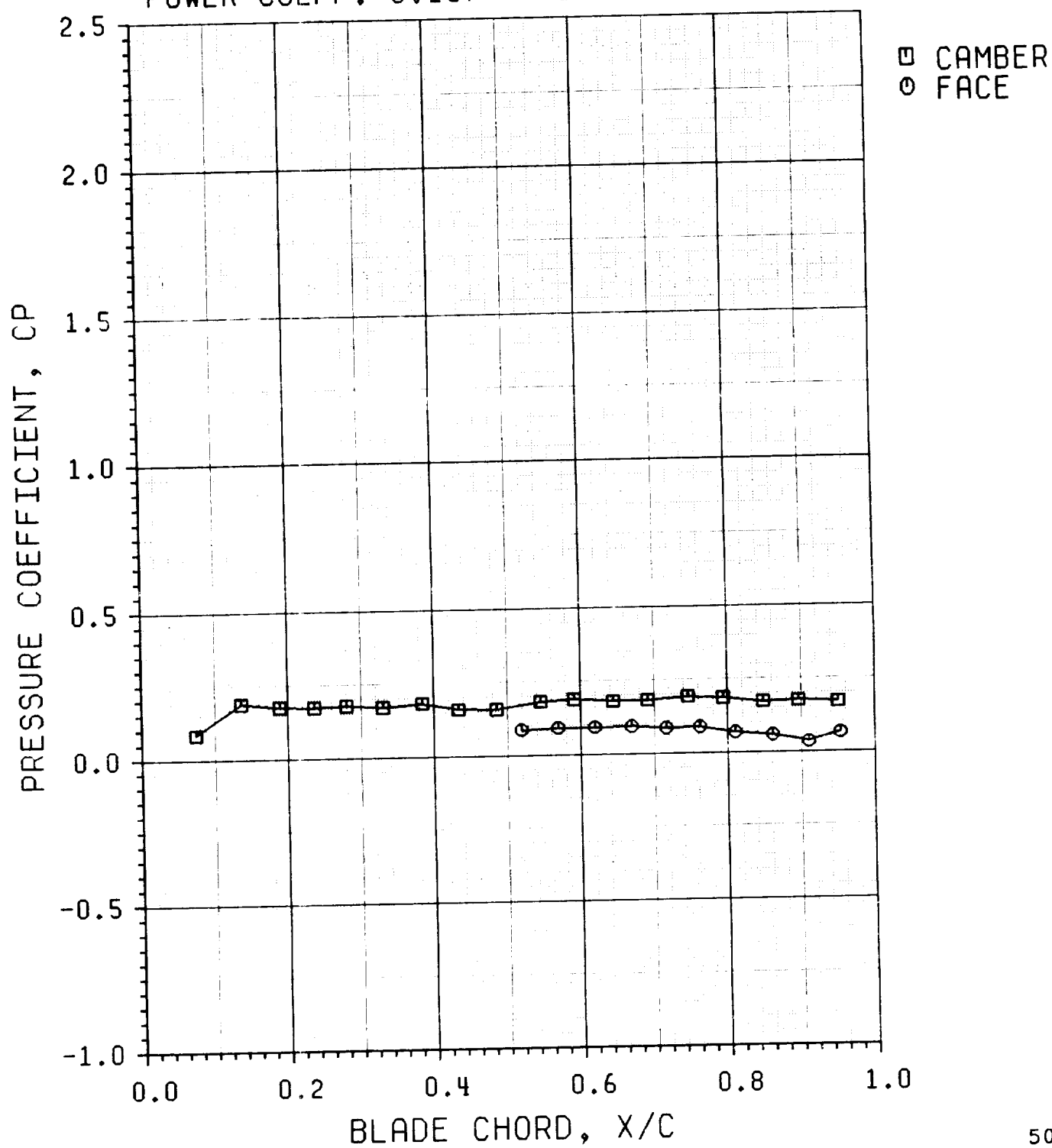
TUNNEL STATIC PRESSURE, PO: 64480.0 PA, 9.352 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	63308.8	9.182	58054.7	7.695	-0.022
0.118	68329.4	9.185	58065.2	7.696	-0.022
0.160	63801.7	9.181	58068.4	7.697	-0.022
0.206	60928.6	8.887	58064.4	7.696	-0.067
0.262	59850.7	8.680	58068.8	7.696	-0.087
0.308	55525.2	8.053	58054.2	7.695	-0.169
0.361	56785.5	8.229	58066.8	7.696	-0.146
0.412	55711.7	8.080	58056.5	7.695	-0.165
0.460	55581.5	8.061	58048.2	7.694	-0.168
0.510	55648.1	8.070	58060.2	7.695	-0.167
0.561	54862.0	7.957	58070.8	7.697	-0.181
0.610	54759.9	7.942	58082.9	7.699	-0.183
0.657	53573.2	7.770	58074.5	7.698	-0.206
0.707	53788.9	7.794	58076.5	7.698	-0.202
0.760	53948.0	7.824	58075.8	7.698	-0.199
0.811	53586.5	7.772	58078.3	7.698	-0.205
0.862	53639.7	7.780	58080.5	7.698	-0.204
0.918	54419.2	7.893	58092.4	7.700	-0.189
0.960	55098.8	7.991	58095.8	7.701	-0.177
FACE					
0.065	48922.6	7.095	58042.4	7.693	-0.293
0.132	50114.9	7.268	58046.4	7.693	-0.271
0.202	52398.5	7.599	58086.6	7.692	-0.228
0.270	54115.9	7.849	58086.7	7.692	-0.195
0.385	56040.1	8.128	58088.1	7.692	-0.159
0.401	57493.6	8.338	58080.7	7.691	-0.182
0.468	59410.0	8.616	58030.2	7.691	-0.096
0.537	60246.5	8.738	58025.8	7.690	-0.080
0.594	60504.2	8.775	58088.4	7.692	-0.075
0.654	60318.8	8.748	58037.4	7.692	-0.078
0.707	60884.8	8.830	58050.6	7.694	-0.068
0.760	60617.8	8.792	58050.1	7.694	-0.073
0.802	62623.3	9.082	58045.7	7.693	-0.035
0.862	63149.4	9.159	58059.4	7.695	-0.025
0.912	65068.0	9.436	58055.4	7.695	0.011
0.958	64294.6	9.325	58066.4	7.696	-0.008

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13    MACH NO: 0.78    ADV. RATIO: 3.222

POWER COEFF: 0.157    RECORD NO: 65.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 65.0

WIND TUNNEL:

STATIC TEMPERATURE:	280.0 K	44.3 F
STATIC PRESSURE:	64150.0 PA	9.304 PSI
AIR DENSITY:	0.7981 KG/M3	0.04982 LBF/FT3
SPEED OF SOUND:	335.46 M/S	1100.64 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	261.66 M/S	858.50 FT/S

PROPFAN:

RADIAL STATION:	13	
ROTOR SPEED (RPM):	1780.0	
ADVANCE RATIO:	3.222	
POWER COEFFICIENT:	0.157	
BLADE ANGLE (@ X=41" STA):	55.2 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3689 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	1.087	

RUN DATE:	03-09-1987
RUN TIME:	17:21:58



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 65.0

RADIAL STATION: 18

TUNNEL STATIC PRESSURE, PO: 64150.0 PA, 9.304 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	59691.1	8.657	53098.2	7.700	-0.084
0.186	54212.2	7.863	53096.7	7.701	-0.187
0.189	54872.4	7.958	53078.4	7.697	-0.175
0.286	55019.6	7.980	53077.0	7.698	-0.172
0.280	54723.0	7.937	53079.5	7.698	-0.178
0.330	55102.7	7.992	53065.8	7.696	-0.170
0.384	54559.7	7.913	53069.1	7.697	-0.181
0.433	55734.1	8.083	53069.8	7.697	-0.159
0.485	55754.8	8.086	53057.6	7.695	-0.158
0.545	54540.3	7.910	53058.5	7.695	-0.181
0.591	54202.1	7.861	53060.4	7.695	-0.187
0.644	54649.2	7.926	53053.8	7.694	-0.179
0.691	54532.8	7.909	53049.7	7.694	-0.181
0.746	54037.8	7.837	53048.8	7.694	-0.191
0.794	54353.5	7.883	53056.8	7.695	-0.185
0.848	55092.6	7.990	53054.0	7.695	-0.171
0.896	54938.3	7.968	53054.2	7.695	-0.174
0.950	55167.0	8.001	53056.6	7.695	-0.169
FACE					
0.074	*****	*****	53069.7	7.697	*****
0.150	*****	*****	53061.6	7.696	*****
0.229	*****	*****	53067.8	7.696	*****
0.302	*****	*****	53049.1	7.694	*****
0.374	*****	*****	53049.1	7.694	*****
0.450	*****	*****	53045.0	7.693	*****
0.519	59594.6	8.643	53033.7	7.692	-0.086
0.569	59306.1	8.601	53033.4	7.692	-0.091
0.619	59349.2	8.608	53035.6	7.692	-0.091
0.669	59197.9	8.586	53039.0	7.692	-0.093
0.716	59630.4	8.648	53039.0	7.692	-0.085
0.762	59535.8	8.635	53036.9	7.692	-0.087
0.810	60589.7	8.787	53030.0	7.691	-0.067
0.861	61106.0	8.862	53020.9	7.690	-0.057
0.910	62350.4	9.043	53041.1	7.693	-0.034
0.953	60754.7	8.811	53030.8	7.691	-0.064

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

FIGURE B13  
(B13.1 through B13.10)

Pressure Coefficient Data for:

Nominal Mach Number,  $M_\infty = 0.775 \pm 0.005$

Advance Ratio,  $J = 3.088 \pm 0.012$

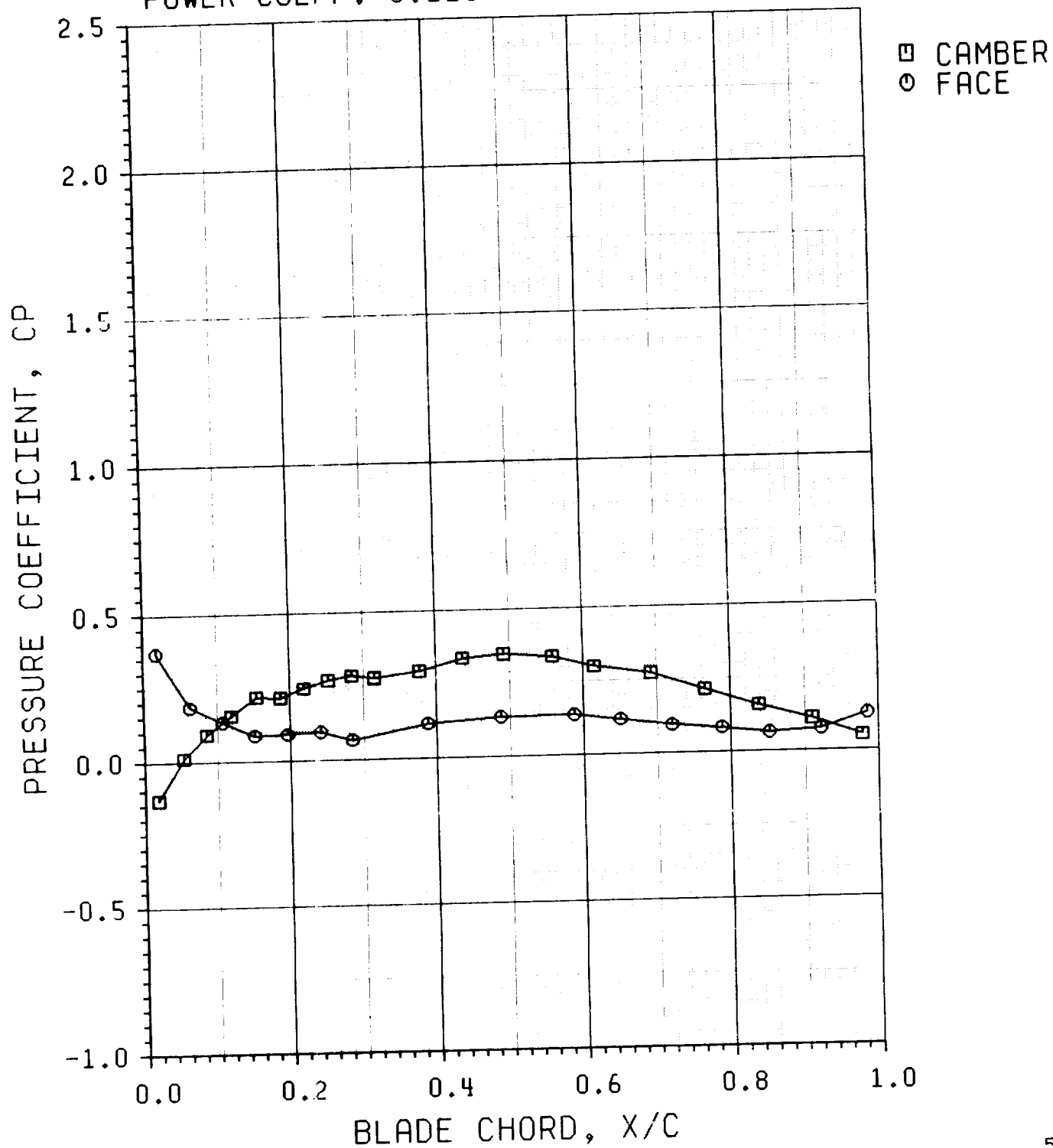
Power Coefficient,  $CP = 0.227 \pm 0.003$

Blade Angle,  $\beta = 54.6 \pm 1.3^\circ$

$\pm$  Indicates maximum station by station variation of the parameter.

RADIAL STA: 1    MACH NO: 0.77    ADV. RATIO: 3.076

POWER COEFF: 0.226    RECORD NO: 167.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 167.0

WIND TUNNEL:

STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	64900.0 PA	9.413 PSI
AIR DENSITY:	0.8103 KG/M3	0.05059 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.77	
INFLOW VELOCITY:	257.84 M/S	845.98 FT/S

PROPFAN:

RADIAL STATION:	1	
ROTOR SPEED (RPM):	1837.0	
ADVANCE RATIO:	3.076	
POWER COEFFICIENT:	0.226	
BLADE ANGLE (@ X=41" STA):	54.9 DEG.	
BLADE CHORD:	0.4750 M	18.70 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.310	
REL MACH NO. (@ MID CHORD):	0.808	

RUN DATE:	03-12-1987
RUN TIME:	18:03:50

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 167.0

RADIAL STATION: 1

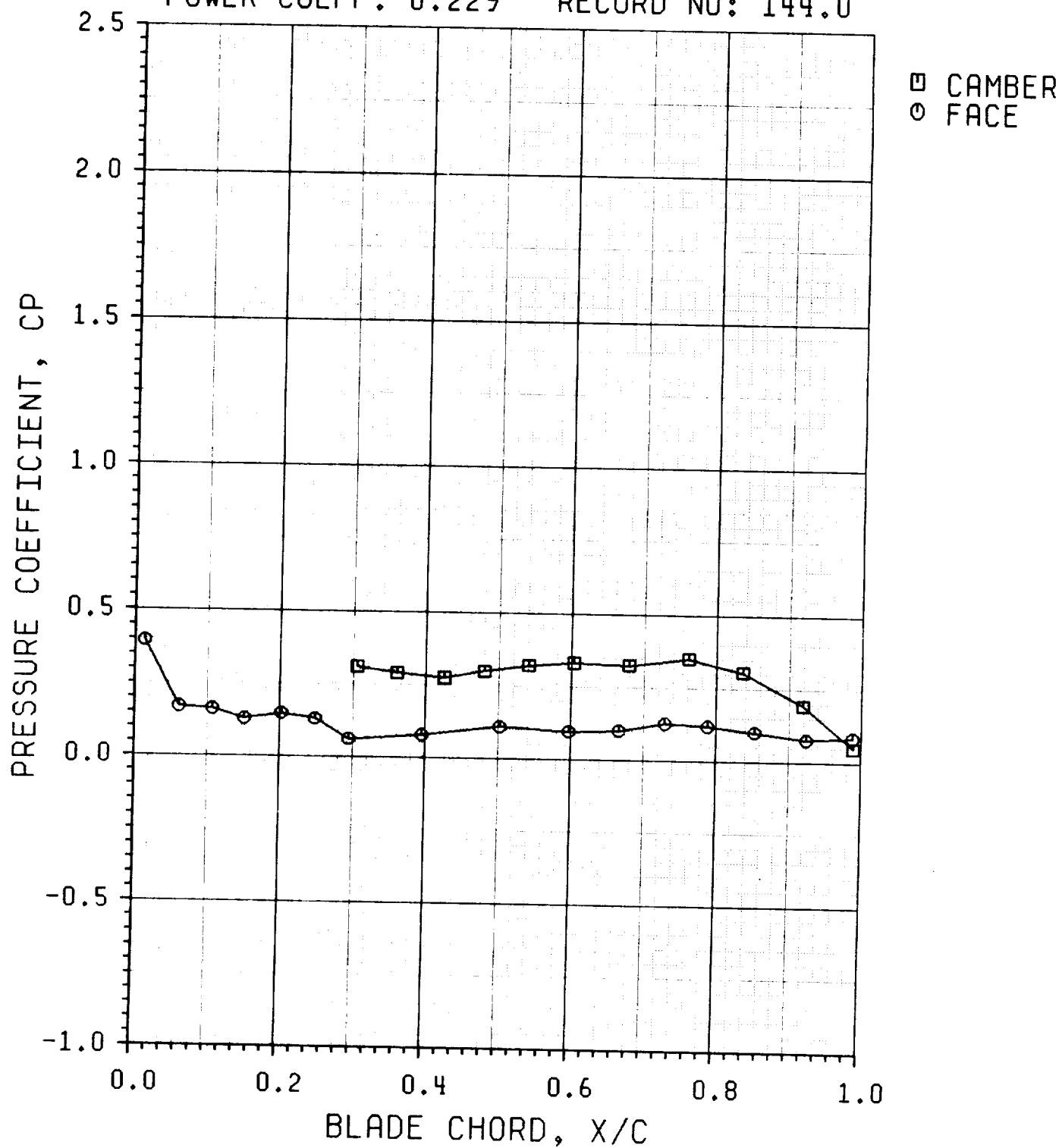
TUNNEL STATIC PRESSURE, PO: 64900.0 PA, 9.413 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.018	68756.8	9.972	29021.0	4.209	0.133
0.053	64569.0	9.365	29048.5	4.213	-0.011
0.085	62264.0	9.030	29073.7	4.217	-0.091
0.119	60412.4	8.762	29105.6	4.221	-0.154
0.154	58609.1	8.500	29187.7	4.226	-0.216
0.187	58691.6	8.512	29173.8	4.231	-0.213
0.219	57767.0	8.378	29209.4	4.236	-0.244
0.252	56990.4	8.265	29244.0	4.241	-0.270
0.284	56578.5	8.206	29279.7	4.247	-0.284
0.315	56828.6	8.242	29320.3	4.252	-0.275
0.377	56229.9	8.155	29397.3	4.264	-0.295
0.436	54990.0	7.975	29480.6	4.276	-0.336
0.492	54652.7	7.926	29531.4	4.283	-0.347
0.558	54947.9	7.969	29651.3	4.300	-0.336
0.615	56016.3	8.124	29739.8	4.313	-0.299
0.692	56775.3	8.234	29850.8	4.329	-0.272
0.765	58512.7	8.486	29977.7	4.348	-0.213
0.838	60207.3	8.732	30090.9	4.364	-0.156
0.910	61664.9	8.943	30215.6	4.382	-0.107
0.978	63402.8	9.195	30331.3	4.399	-0.049
FACE					
0.018	54150.4	7.854	29034.5	4.211	-0.370
0.063	59536.2	8.635	29106.4	4.221	-0.184
0.107	61046.5	8.854	29158.3	4.229	-0.132
0.151	62375.7	9.047	29205.0	4.236	-0.086
0.196	62310.2	9.037	29255.7	4.243	-0.089
0.241	62106.4	9.007	29304.2	4.250	-0.095
0.284	62949.6	9.180	29347.8	4.256	-0.066
0.388	61480.3	8.917	29466.3	4.274	-0.116
0.487	60959.1	8.841	29590.8	4.292	-0.133
0.587	60880.1	8.830	29721.2	4.311	-0.135
0.650	61444.1	8.911	29800.0	4.322	-0.116
0.720	62084.8	9.004	29897.3	4.336	-0.094
0.788	62474.2	9.061	30002.0	4.351	-0.081
0.852	63048.6	9.144	30102.8	4.366	-0.062
0.922	62696.0	9.093	30216.9	4.382	-0.073
0.985	61212.8	8.878	30328.6	4.399	-0.122

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 3 MACH NO: 0.77 ADV. RATIO: 3.092

POWER COEFF: 0.229 RECORD NO: 144.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 144.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	64930.0 PA	9.417 PSI
AIR DENSITY:	0.8107 KG/M3	0.05061 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.77	
INFLOW VELOCITY:	257.84 M/S	845.98 FT/S

## PROPFAN:

---

RADIAL STATION:	3	
ROTOR SPEED (RPM):	1828.0	
ADVANCE RATIO:	3.092	
POWER COEFFICIENT:	0.229	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.5731 M	22.56 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.569	
REL MACH NO. (@ MID CHORD):	0.890	

RUN DATE:	03-11-1987
RUN TIME:	22:27:37

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 144.0

RADIAL STATION: 8

TUNNEL STATIC PRESSURE, PO: 64930.0 PA, 9.417 PSI

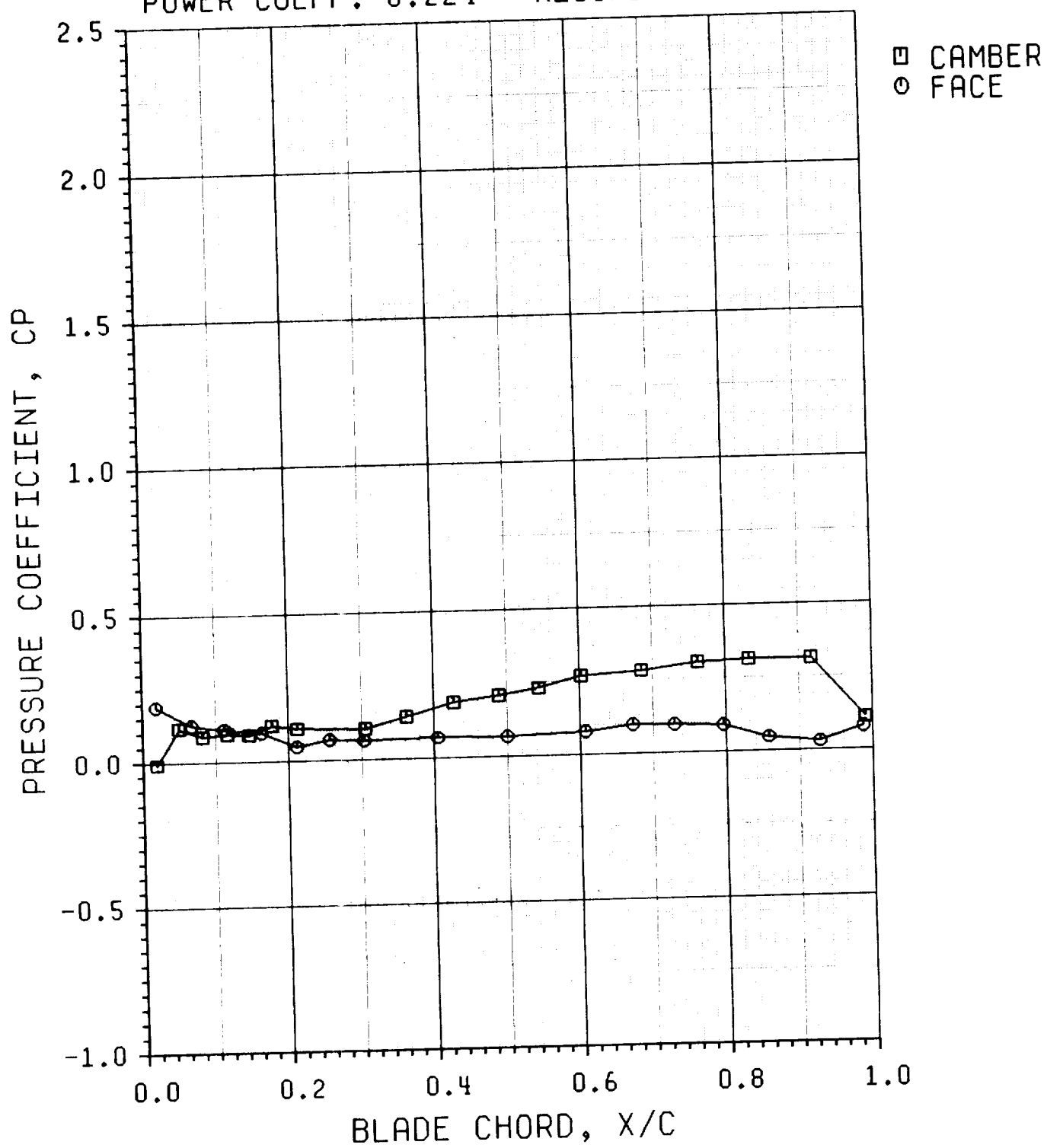
CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.013	*****	*****	35457.2	5.142	*****
0.046	*****	*****	35462.4	5.143	*****
0.077	*****	*****	35457.8	5.143	*****
0.107	*****	*****	35467.2	5.144	*****
0.139	*****	*****	35470.5	5.144	*****
0.173	*****	*****	35474.2	5.145	*****
0.201	*****	*****	35489.4	5.147	*****
0.238	*****	*****	35508.8	5.149	*****
0.271	*****	*****	35524.1	5.152	*****
0.305	53897.1	7.817	35549.4	5.156	-0.310
0.360	54621.2	7.922	35586.7	5.161	-0.290
0.425	55135.6	7.996	35645.2	5.170	-0.275
0.480	54267.0	7.870	35690.8	5.176	-0.299
0.541	53442.9	7.751	35772.6	5.188	-0.321
0.603	52992.7	7.686	35840.4	5.198	-0.333
0.679	53214.0	7.718	35956.1	5.215	-0.326
0.761	52278.5	7.581	36077.0	5.232	-0.351
0.836	53841.0	7.809	36206.4	5.251	-0.306
0.919	57877.1	8.394	36354.5	5.273	-0.194
0.989	63141.7	9.158	36490.4	5.292	-0.049
FACE					
0.013	50968.6	7.392	35478.9	5.146	-0.394
0.061	59006.7	8.558	35489.7	5.147	-0.167
0.107	59264.3	8.595	35496.3	5.148	-0.160
0.151	60399.1	8.760	35507.1	5.150	-0.128
0.202	59747.6	8.665	35525.8	5.152	-0.146
0.248	60362.1	8.754	35543.4	5.155	-0.129
0.294	62770.3	9.104	35567.6	5.158	-0.061
0.395	62142.1	9.013	35635.1	5.168	-0.078
0.502	61050.0	8.854	35739.6	5.183	-0.109
0.597	61480.1	8.917	35835.4	5.197	-0.096
0.666	61292.5	8.889	35938.2	5.212	-0.101
0.729	60322.1	8.749	36010.4	5.223	-0.128
0.788	60606.9	8.790	36103.2	5.236	-0.120
0.853	61287.7	8.889	36219.0	5.253	-0.101
0.924	62107.6	9.008	36344.6	5.271	-0.078
0.988	61813.1	8.965	36479.0	5.291	-0.085

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



RADIAL STA: 5    MACH NO: 0.78    ADV. RATIO: 3.077

POWER COEFF: 0.224    RECORD NO: 54.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

---

OPERATING PARAMETERS FOR RECORD NUMBER: 54.0

WIND TUNNEL:

STATIC TEMPERATURE:	275.0 K	35.3 F
STATIC PRESSURE:	64720.0 PA	9.387 PSI
AIR DENSITY:	0.8198 KG/M3	0.05118 LBF/FT3
SPEED OF SOUND:	332.45 M/S	1090.77 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	259.31 M/S	850.80 FT/S

PROPFAN:

RADIAL STATION:	5	
ROTOR SPEED (RPM):	1847.0	
ADVANCE RATIO:	3.077	
POWER COEFFICIENT:	0.224	
BLADE ANGLE (@ X=41" STA):	55.0 DEG.	
BLADE CHORD:	0.5314 M	20.92 IN.
RADIAL DISTANCE TO TIP		
(@ MID CHORD POINT):	1.3690 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.739	
REL MACH NO. (@ MID CHORD):	0.977	

RUN DATE:	03-06-1987
RUN TIME:	18:35:28

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 54.0

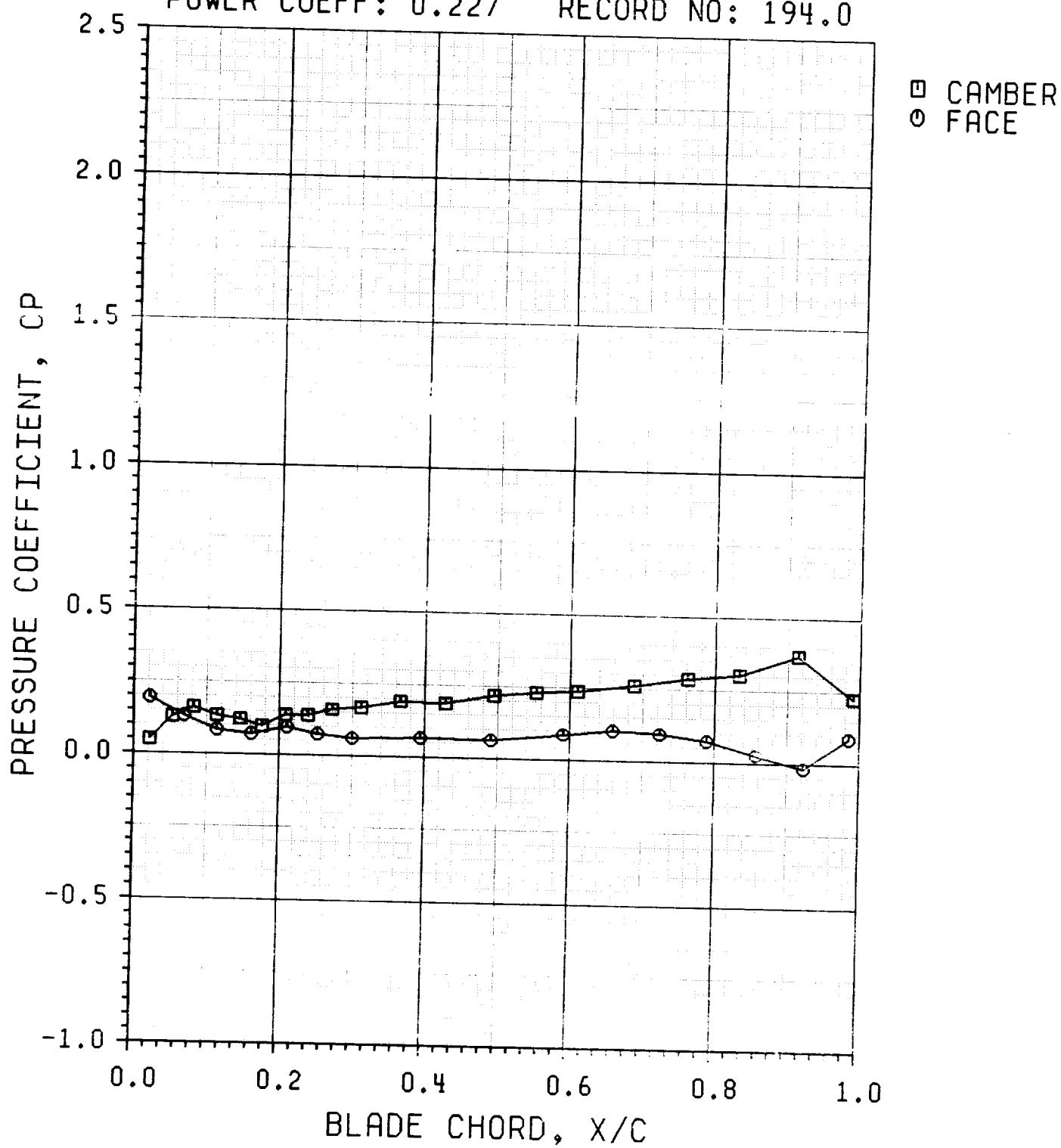
RADIAL STATION: 5

TUNNEL STATIC PRESSURE, P0: 64720.0 PA, 9.387 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.019	65102.9	9.442	42920.6	6.225	0.009
0.050	59751.0	8.666	42899.3	6.222	-0.116
0.082	60934.9	8.838	42875.9	6.218	-0.088
0.116	60631.7	8.794	42860.0	6.216	-0.095
0.146	60819.6	8.821	42846.2	6.214	-0.091
0.177	59536.6	8.635	42837.2	6.213	-0.121
0.212	60072.2	8.712	42831.2	6.212	-0.109
0.241	*****	*****	42828.9	6.212	*****
0.278	*****	*****	42828.3	6.211	*****
0.305	60201.9	8.731	42829.9	6.212	-0.105
0.362	58619.5	8.502	42846.5	6.214	-0.142
0.427	56715.6	8.226	42875.9	6.218	-0.187
0.489	55778.7	8.090	42903.8	6.222	-0.208
0.544	54871.0	7.958	42946.4	6.229	-0.229
0.602	53199.8	7.716	43009.2	6.238	-0.268
0.685	52606.0	7.630	43097.1	6.250	-0.281
0.762	51527.7	7.473	43196.1	6.265	-0.305
0.832	51188.5	7.424	43300.1	6.280	-0.813
0.917	51162.6	7.420	43445.5	6.301	-0.312
0.990	59967.3	8.697	43579.7	6.320	-0.109
FACE					
0.019	56566.0	8.204	42944.7	6.228	-0.190
0.067	59341.7	8.606	42910.4	6.223	-0.125
0.112	59966.5	8.697	42877.3	6.219	-0.111
0.163	60574.2	8.785	42863.8	6.217	-0.097
0.211	62649.6	9.086	42860.5	6.216	-0.048
0.256	61704.7	8.949	42858.7	6.216	-0.070
0.303	61948.7	8.985	42858.2	6.216	-0.065
0.405	61753.5	8.956	42873.3	6.218	-0.069
0.500	61822.8	8.966	42918.4	6.225	-0.068
0.607	61383.4	8.903	43017.4	6.239	-0.078
0.672	60545.8	8.781	43076.1	6.247	-0.097
0.729	60608.2	8.790	43152.6	6.259	-0.095
0.796	60819.9	8.821	43237.9	6.271	-0.090
0.858	62714.6	9.096	43325.8	6.284	-0.046
0.928	63440.5	9.201	43447.3	6.301	-0.029
0.987	61381.7	8.902	43562.4	6.318	-0.077

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 6    MACH NO: 0.77    ADV. RATIO: 3.087  
POWER COEFF: 0.227    RECORD NO: 194.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 194.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	283.0 K	49.7 F
STATIC PRESSURE:	64670.0 PA	9.379 PSI
AIR DENSITY:	0.7960 KG/M3	0.04970 LBF/FT3
SPEED OF SOUND:	337.25 M/S	1106.52 FT/S
INFLOW MACH NUMBER:	0.77	
INFLOW VELOCITY:	259.68 M/S	852.02 FT/S

## PROPFAN:

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RADIAL STATION:	6	
ROTOR SPEED (RPM):	1842.0	
ADVANCE RATIO:	3.087	
POWER COEFFICIENT:	0.227	
BLADE ANGLE (@ X=41" STA):	53.3 DEG.	
BLADE CHORD:	0.4675 M	18.41 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3699 M	53.93 IN.
RADIUS RATIO (@ MID CHORD):	0.806	
REL MACH NO. (@ MID CHORD):	0.996	

RUN DATE:	03-13-1987
RUN TIME:	15:21:44

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 194.0

RADIAL STATION: 6

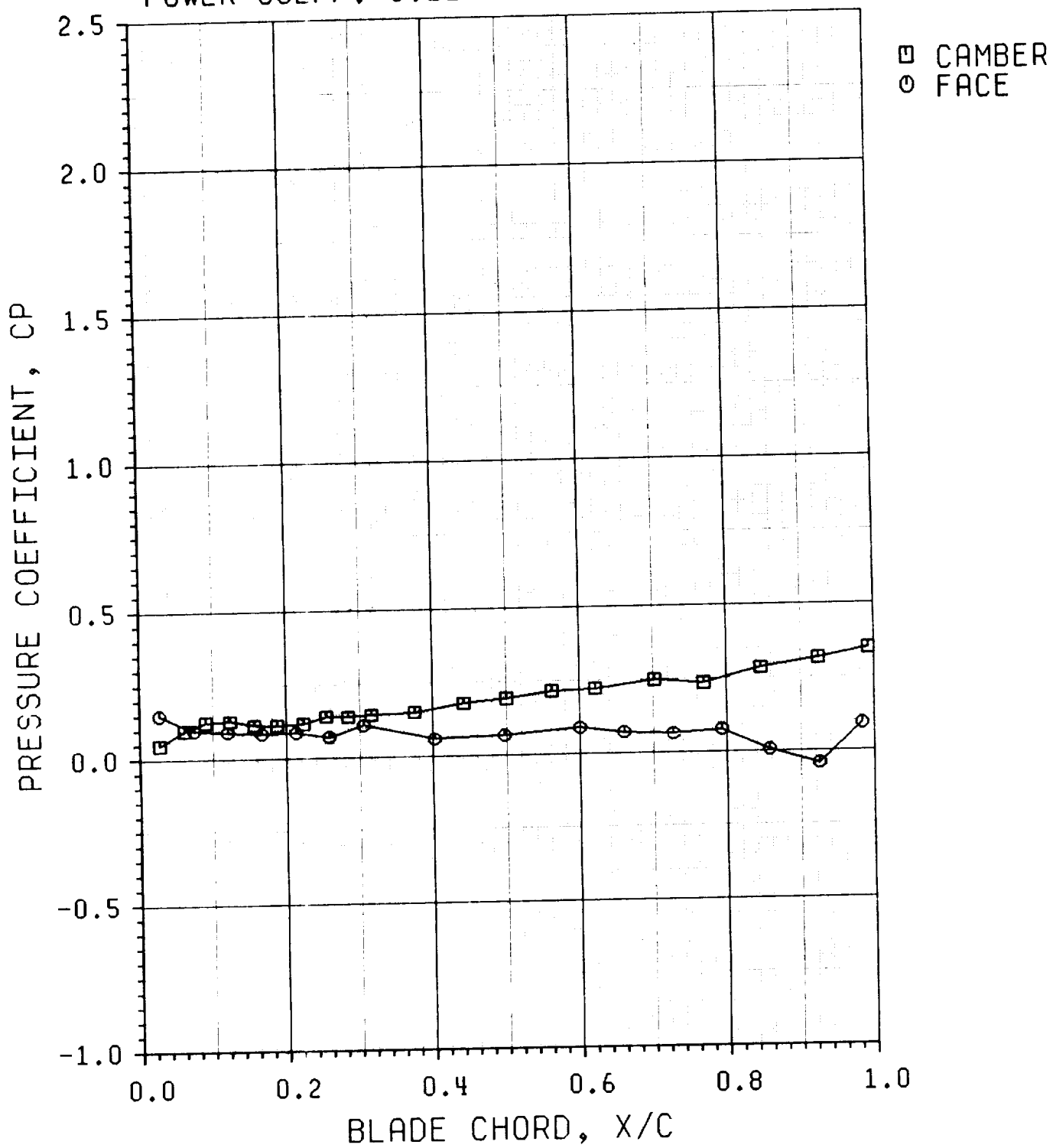
TUNNEL STATIC PRESSURE, PO: 64670.0 PA, 9.379 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.022	62551.1	9.072	44619.8	6.471	-0.047
0.058	59013.6	8.559	44602.7	6.469	-0.127
0.082	57513.5	8.341	44589.8	6.467	-0.160
0.114	58756.0	8.522	44588.8	6.467	-0.183
0.146	59257.2	8.594	44581.4	6.466	-0.121
0.176	60307.0	8.746	44559.2	6.463	-0.098
0.208	58508.8	8.486	44556.2	6.462	-0.188
0.239	58522.4	8.488	44561.3	6.463	-0.188
0.272	57568.0	8.349	44558.9	6.462	-0.159
0.312	57175.9	8.292	44566.7	6.464	-0.168
0.366	56154.8	8.144	44581.4	6.466	-0.191
0.428	56278.4	8.162	44608.7	6.470	-0.188
0.495	54919.9	7.965	44633.4	6.473	-0.218
0.553	54402.7	7.890	44666.1	6.478	-0.230
0.610	54065.6	7.841	44708.4	6.484	-0.237
0.688	53038.3	7.692	44785.8	6.495	-0.260
0.762	51788.5	7.511	44872.9	6.508	-0.287
0.833	51079.3	7.408	44967.3	6.522	-0.302
0.914	47977.4	6.958	45079.2	6.538	-0.370
0.991	54446.1	7.896	45194.6	6.555	-0.226
FACE					
0.022	56089.5	8.185	44631.7	6.473	-0.192
0.069	58853.5	8.536	44606.2	6.469	-0.130
0.114	61032.3	8.852	44587.9	6.467	-0.082
0.161	61540.0	8.925	44568.5	6.464	-0.070
0.210	60421.6	8.763	44565.4	6.463	-0.095
0.252	61440.9	8.911	44559.6	6.463	-0.072
0.300	62005.1	8.993	44552.2	6.462	-0.060
0.394	61764.5	8.958	44575.6	6.465	-0.065
0.491	61896.7	8.977	44609.5	6.470	-0.062
0.591	60830.1	8.822	44681.7	6.480	-0.086
0.659	60102.7	8.717	44729.9	6.487	-0.102
0.724	60439.5	8.766	44798.5	6.497	-0.094
0.789	61386.0	8.903	44865.5	6.507	-0.073
0.857	63510.2	9.211	44969.0	6.522	-0.026
0.923	65435.1	9.490	45067.5	6.536	0.017
0.985	60730.0	8.808	45167.0	6.551	-0.087

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 7    MACH NO: 0.78    ADV. RATIO: 3.089

POWER COEFF: 0.224    RECORD NO: 113.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 113.0

WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	64480.0 PA	9.352 PSI
AIR DENSITY:	0.8080 KG/M3	0.05044 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	260.72 M/S	855.43 FT/S

PROPFAN:

RADIAL STATION:	7	
ROTOR SPEED (RPM):	1850.0	
ADVANCE RATIO:	3.089	
POWER COEFFICIENT:	0.224	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.3965 M	15.61 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3685 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.861	
REL MACH NO. (@ MID CHORD):	1.037	

RUN DATE:	03-10-1987
RUN TIME:	21:16:04



# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 113.0

RADIAL STATION: 7

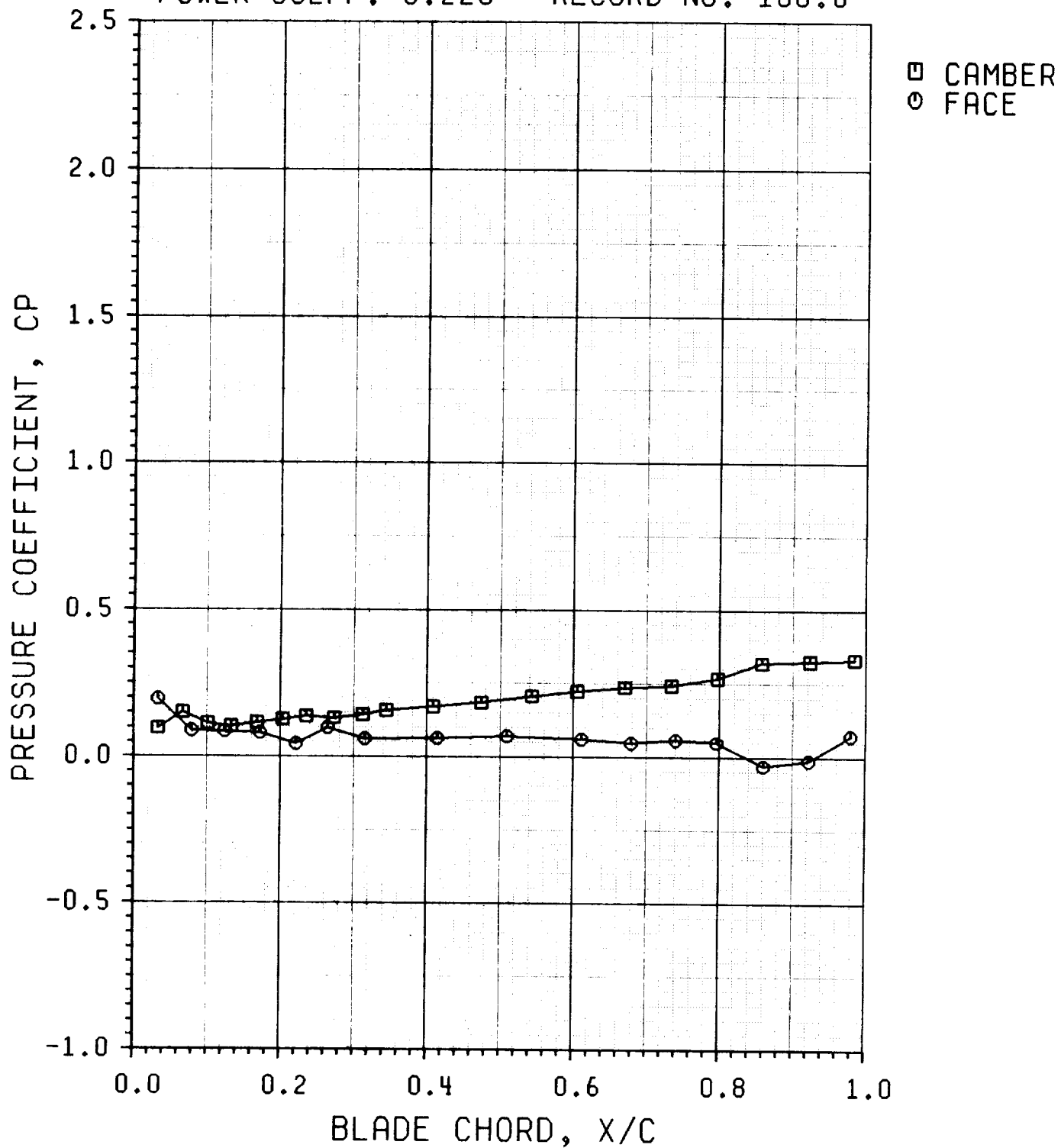
TUNNEL STATIC PRESSURE, PO: 64480.0 PA, 9.352 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.027	62180.8	9.018	48310.1	7.007	-0.048
0.061	59769.8	8.669	48309.4	7.006	-0.098
0.090	58455.6	8.478	48310.0	7.007	-0.125
0.123	58249.2	8.448	48303.1	7.006	-0.129
0.156	58956.7	8.551	48295.4	7.004	-0.114
0.187	59031.4	8.561	48283.3	7.003	-0.113
0.228	58774.1	8.524	48293.6	7.004	-0.118
0.254	57688.4	8.367	48304.4	7.006	-0.141
0.284	57743.3	8.375	48301.9	7.005	-0.139
0.316	57510.0	8.341	48307.3	7.006	-0.144
0.375	57173.8	8.292	48314.9	7.007	-0.151
0.442	55837.9	8.098	48334.7	7.010	-0.179
0.500	55171.2	8.002	48368.6	7.015	-0.192
0.562	54094.7	7.845	48403.9	7.020	-0.215
0.621	53776.0	7.799	48433.7	7.024	-0.221
0.702	52490.8	7.613	48508.3	7.035	-0.247
0.769	53076.1	7.698	48557.6	7.042	-0.235
0.846	50682.0	7.351	48626.6	7.052	-0.284
0.924	49157.5	7.129	48711.6	7.065	-0.315
0.992	47515.9	6.891	48786.7	7.076	-0.348
FACE					
0.027	57210.6	8.297	48302.6	7.005	-0.150
0.074	59801.6	8.673	48302.6	7.005	-0.097
0.120	60083.6	8.714	48278.2	7.002	-0.091
0.166	60380.2	8.757	48289.7	7.004	-0.085
0.213	60271.8	8.741	48265.5	7.000	-0.087
0.258	61062.3	8.856	48275.9	7.002	-0.071
0.305	59239.2	8.592	48281.5	7.002	-0.109
0.402	61649.9	8.941	48302.9	7.005	-0.059
0.497	61232.0	8.881	48344.4	7.012	-0.067
0.600	60158.2	8.725	48388.8	7.018	-0.089
0.660	61021.2	8.850	48423.8	7.023	-0.071
0.727	61382.5	8.902	48482.6	7.032	-0.064
0.793	60794.3	8.817	48547.7	7.041	-0.076
0.857	64238.8	9.317	48617.0	7.051	-0.005
0.925	66604.0	9.660	48691.9	7.062	0.044
0.983	59957.0	8.696	48768.5	7.073	-0.093

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 8 MACH NO: 0.77 ADV. RATIO: 3.078

POWER COEFF: 0.228 RECORD NO: 180.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 180.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	64940.0 PA	9.418 PSI
AIR DENSITY:	0.8137 KG/M3	0.05080 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.77	
INFLOW VELOCITY:	257.38 M/S	844.46 FT/S

## PROPFAN:

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RADIAL STATION:	8	
ROTOR SPEED (RPM):	1832.0	
ADVANCE RATIO:	3.078	
POWER COEFFICIENT:	0.228	
BLADE ANGLE (@ X=41" STA):	54.7 DEG.	
BLADE CHORD:	0.3256 M	12.82 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3692 M	53.90 IN.
RADIUS RATIO (@ MID CHORD):	0.905	
REL MACH NO. (@ MID CHORD):	1.048	

RUN DATE:	03-12-1987
RUN TIME:	21:46:39

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 180.0

RADIAL STATION: 8

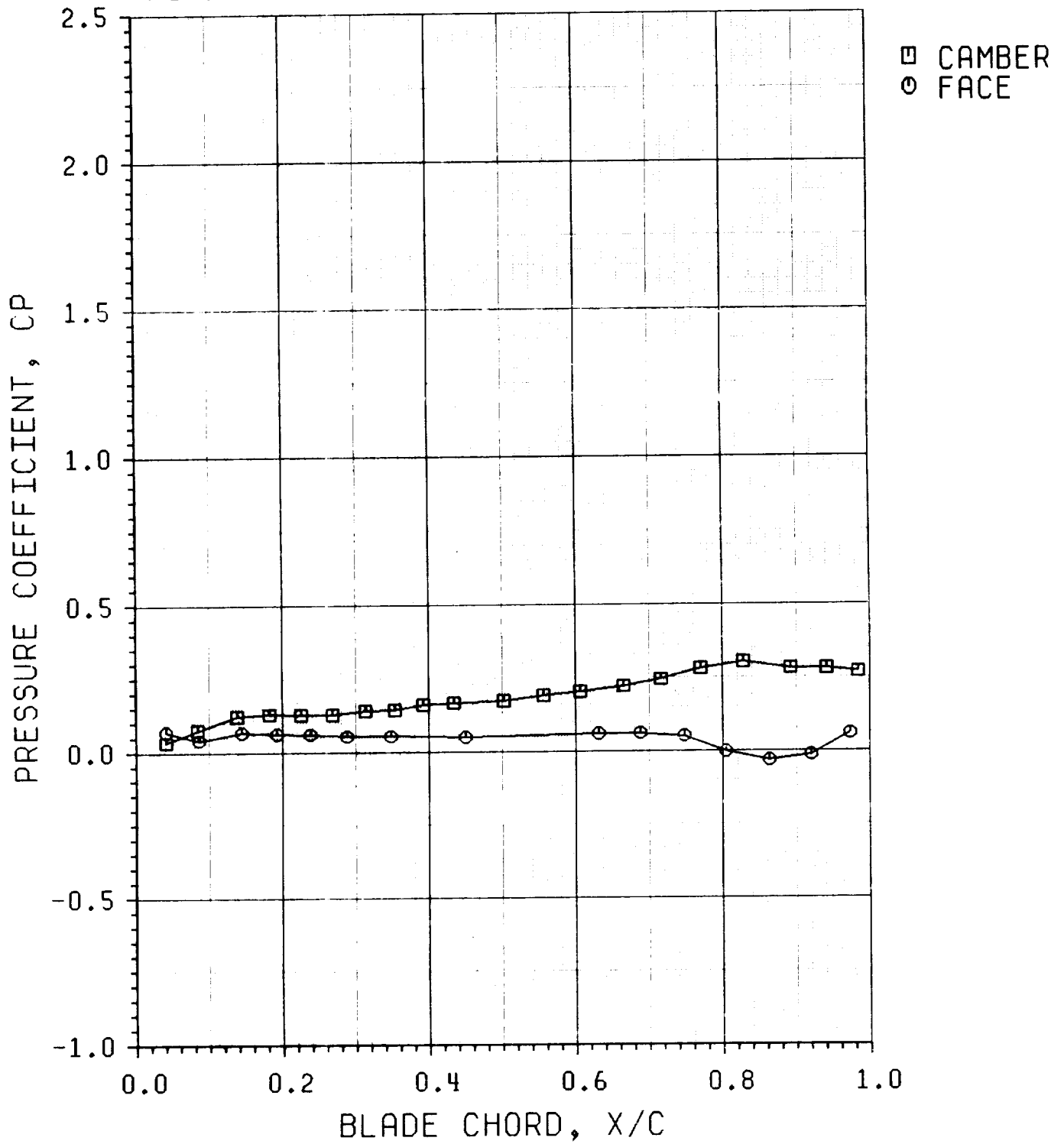
TUNNEL STATIC PRESSURE, PO: 64940.0 PA, 9.418 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.033	60168.2	8.726	49764.8	7.218	-0.096
0.067	57471.4	8.335	49761.9	7.217	-0.150
0.101	59328.7	8.605	49757.5	7.216	-0.113
0.133	59877.0	8.684	49757.1	7.216	-0.102
0.168	59213.6	8.588	49771.0	7.218	-0.115
0.203	58687.8	8.512	49763.8	7.217	-0.126
0.235	58106.3	8.427	49759.8	7.217	-0.137
0.273	58443.5	8.476	49775.3	7.219	-0.131
0.312	57796.9	8.382	49786.4	7.221	-0.143
0.344	57066.3	8.276	49791.4	7.221	-0.158
0.408	56475.9	8.191	49811.4	7.224	-0.170
0.474	55786.2	8.091	49830.2	7.227	-0.184
0.543	54647.2	7.926	49851.8	7.230	-0.206
0.605	53887.3	7.815	49893.7	7.236	-0.222
0.670	53169.1	7.711	49927.7	7.241	-0.236
0.734	52844.0	7.664	49962.7	7.246	-0.242
0.797	51533.0	7.474	50019.6	7.254	-0.268
0.857	48976.3	7.103	50046.5	7.258	-0.319
0.923	48666.6	7.058	50119.1	7.269	-0.325
0.984	48349.0	7.012	50155.6	7.274	-0.331
FACE					
0.033	55285.6	8.011	49747.9	7.215	-0.195
0.079	60558.6	8.783	49742.3	7.214	-0.088
0.124	60731.4	8.808	49749.0	7.215	-0.085
0.172	60946.8	8.839	49738.4	7.214	-0.080
0.221	62808.5	9.109	49729.4	7.212	-0.043
0.264	60105.3	8.717	49739.2	7.214	-0.097
0.315	61973.6	8.988	49747.1	7.215	-0.060
0.414	61861.9	8.972	49773.9	7.219	-0.062
0.509	61431.5	8.910	49805.7	7.223	-0.070
0.611	61971.5	8.988	49857.9	7.231	-0.060
0.679	62562.0	9.074	49890.4	7.236	-0.048
0.740	62047.4	8.999	49927.2	7.241	-0.058
0.796	62468.0	9.060	49966.3	7.247	-0.049
0.860	66509.1	9.646	50016.2	7.254	0.031
0.922	65578.9	9.511	50088.5	7.264	0.013
0.979	61265.9	8.886	50140.2	7.272	-0.073

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 9 MACH NO: 0.77 ADV. RATIO: 3.083

POWER COEFF: 0.226 RECORD NO: 98.0



LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 98.0

WIND TUNNEL:

STATIC TEMPERATURE:	285.0 K	53.8 F
STATIC PRESSURE:	64700.0 PA	9.384 PSI
AIR DENSITY:	0.7908 KG/M3	0.04937 LBF/FT3
SPEED OF SOUND:	338.44 M/S	1110.43 FT/S
INFLOW MACH NUMBER:	0.77	
INFLOW VELOCITY:	260.60 M/S	855.03 FT/S

PROPFAN:

RADIAL STATION:	9	
ROTOR SPEED (RPM):	1853.0	
ADVANCE RATIO:	3.083	
POWER COEFFICIENT:	0.226	
BLADE ANGLE (@ X=41" STA):	55.7 DEG.	
BLADE CHORD:	0.2591 M	10.20 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3686 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.939	
REL MACH NO. (@ MID CHORD):	1.066	

RUN DATE:	03-10-1987
RUN TIME:	16:28:41

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

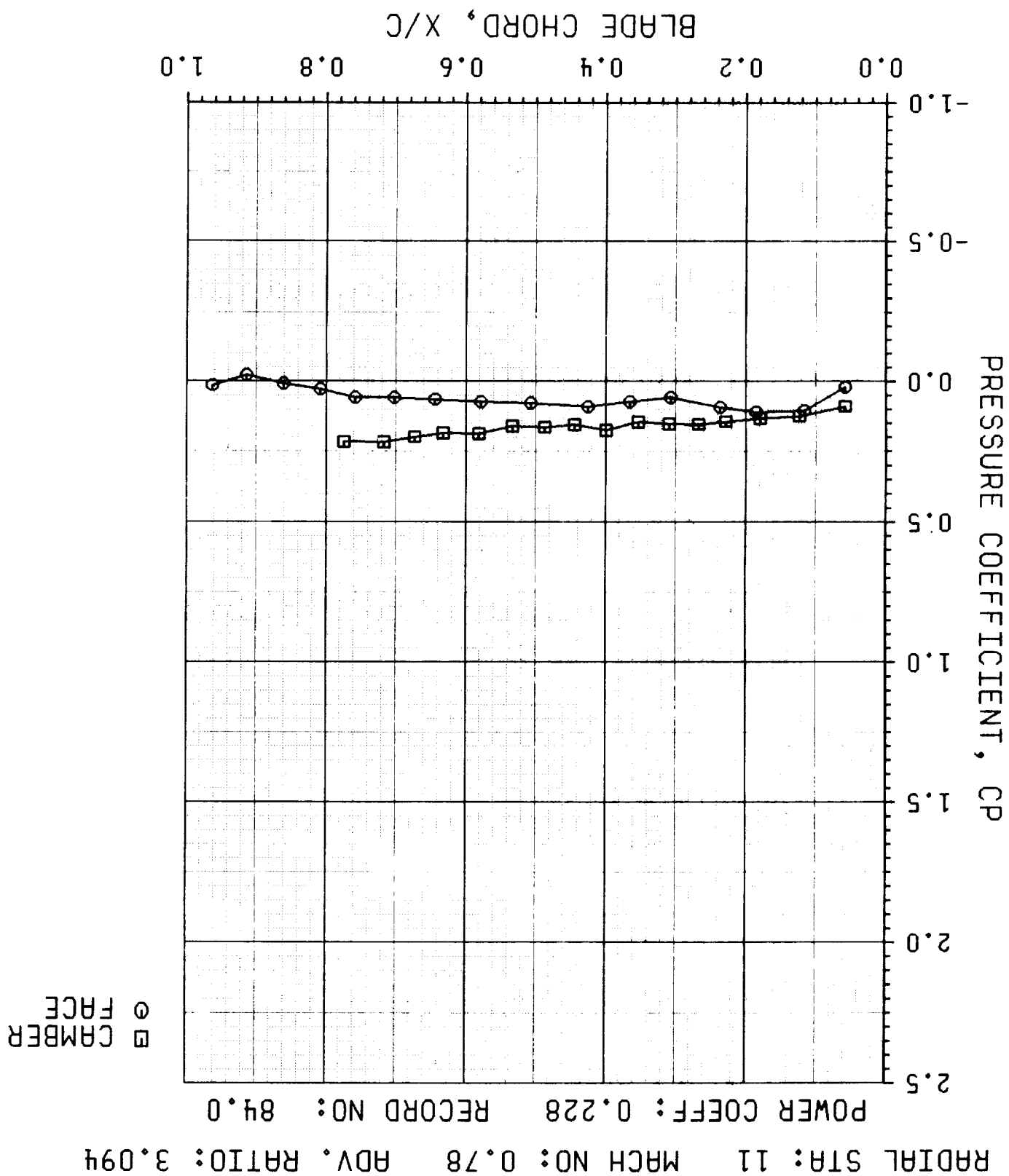
RECORD NUMBER: 98.0

RADIAL STATION: 9

TUNNEL STATIC PRESSURE, P0: 64700.0 PA, 9.384 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.041	62959.6	9.131	51385.1	7.453	-0.034
0.084	60780.4	8.815	51392.5	7.454	-0.076
0.138	58432.5	8.475	51392.1	7.454	-0.122
0.182	58095.9	8.426	51387.5	7.453	-0.129
0.225	58185.8	8.439	51397.9	7.454	-0.127
0.268	58174.1	8.437	51384.9	7.452	-0.127
0.313	57516.8	8.342	51393.4	7.454	-0.140
0.353	57346.3	8.317	51394.3	7.454	-0.143
0.392	56478.3	8.191	51404.1	7.455	-0.160
0.434	56156.8	8.145	51405.2	7.455	-0.166
0.502	55835.5	8.098	51418.3	7.457	-0.172
0.556	54909.7	7.964	51431.9	7.459	-0.190
0.606	54264.7	7.870	51456.1	7.463	-0.203
0.665	53328.0	7.734	51457.7	7.463	-0.221
0.716	52163.4	7.565	51476.8	7.466	-0.244
0.770	50294.8	7.294	51486.2	7.467	-0.280
0.828	49155.7	7.129	51514.9	7.471	-0.302
0.892	50210.5	7.282	51534.3	7.474	-0.281
0.941	50253.7	7.288	51550.9	7.477	-0.280
0.984	50827.0	7.372	51560.8	7.478	-0.269
FACE					
0.041	61087.1	8.860	51375.9	7.451	-0.070
0.086	62599.8	9.079	51377.7	7.451	-0.041
0.144	61250.4	8.883	51367.4	7.450	-0.067
0.192	61511.0	8.921	51366.1	7.450	-0.062
0.238	61570.1	8.930	51364.7	7.450	-0.061
0.288	61904.0	8.978	51366.4	7.450	-0.054
0.348	61920.0	8.980	51372.5	7.451	-0.054
0.450	62145.0	9.013	51376.1	7.451	-0.050
0.539	*****	*****	51406.6	7.456	*****
0.631	61611.2	8.936	51418.5	7.457	-0.060
0.688	61549.1	8.927	51438.0	7.460	-0.061
0.748	62095.7	9.006	51450.8	7.462	-0.051
0.804	64799.7	9.398	51482.4	7.467	0.002
0.863	66401.4	9.630	51499.6	7.469	0.033
0.920	65433.3	9.490	51520.2	7.472	0.014
0.973	61639.6	8.940	51543.7	7.476	-0.059

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.





LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

OPERATING PARAMETERS FOR RECORD NUMBER: 84.0

WIND TUNNEL:

STATIC TEMPERATURE:	278.0 K	40.7 F
STATIC PRESSURE:	64350.0 PA	9.333 PSI
AIR DENSITY:	0.8063 KG/M3	0.05034 LBF/FT3
SPEED OF SOUND:	334.26 M/S	1096.70 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	260.72 M/S	855.43 FT/S

PROPFAN:

RADIAL STATION:	11	
ROTOR SPEED (RPM):	1847.0	
ADVANCE RATIO:	3.094	
POWER COEFFICIENT:	0.228	
BLADE ANGLE (@ X=41" STA):	55.4 DEG.	
BLADE CHORD:	0.1858 M	7.32 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3688 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.975	
REL MACH NO. (@ MID CHORD):	1.098	

RUN DATE:	03-09-1987
RUN TIME:	22:39:21

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 84.0

RADIAL STATION: 11

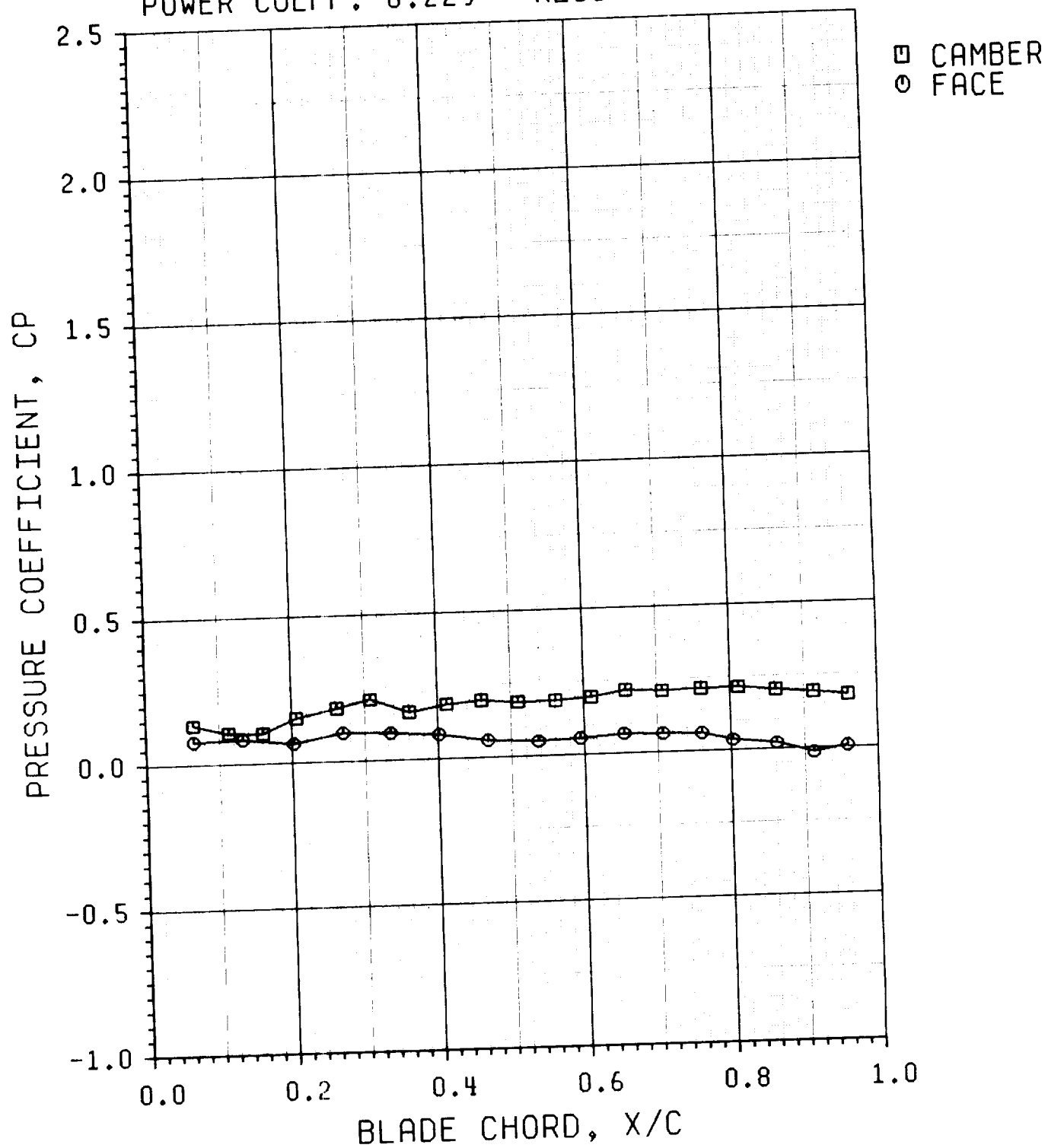
TUNNEL STATIC PRESSURE, PO: 64350.0 PA, 9.333 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.058	59534.4	8.634	54266.6	7.870	-0.089
0.128	57623.0	8.857	54282.8	7.873	-0.124
0.179	57126.9	8.285	54290.0	7.874	-0.133
0.228	56551.7	8.202	54290.8	7.874	-0.144
0.267	55968.5	8.117	54294.5	7.874	-0.154
0.309	56105.0	8.137	54282.9	7.873	-0.152
0.353	56472.4	8.190	54284.1	7.873	-0.145
0.399	54871.3	7.958	54284.9	7.873	-0.175
0.444	55911.2	8.109	54288.8	7.874	-0.155
0.487	55467.6	8.045	54296.5	7.875	-0.164
0.533	55685.6	8.076	54306.4	7.876	-0.160
0.581	54202.6	7.861	54311.4	7.877	-0.187
0.632	54278.9	7.872	54314.9	7.877	-0.185
0.673	53529.8	7.764	54321.0	7.878	-0.199
0.717	52538.5	7.620	54313.0	7.877	-0.217
0.774	52602.1	7.629	54326.8	7.879	-0.216
0.822	*****	*****	54328.2	7.879	*****
0.875	*****	*****	54331.0	7.880	*****
0.928	*****	*****	54362.3	7.884	*****
0.974	*****	*****	54861.0	7.884	*****
FACE					
0.058	63269.0	9.176	54253.8	7.869	-0.020
0.116	58707.9	8.515	54255.6	7.869	-0.104
0.185	58424.3	8.473	54242.9	7.867	-0.109
0.236	59301.9	8.601	54252.8	7.868	-0.093
0.307	61232.4	8.881	54247.0	7.868	-0.057
0.365	60395.1	8.759	54246.9	7.868	-0.073
0.425	59445.0	8.621	54249.2	7.868	-0.090
0.507	60129.4	8.721	54242.5	7.867	-0.078
0.578	60456.9	8.768	54256.9	7.869	-0.072
0.644	60884.7	8.830	54266.7	7.870	-0.064
0.702	61230.1	8.880	54266.7	7.870	-0.057
0.758	61181.4	8.873	54281.5	7.873	-0.058
0.808	62897.6	9.122	54291.4	7.874	-0.027
0.861	63888.5	9.266	54298.1	7.875	-0.008
0.914	65593.9	9.513	54306.8	7.876	0.023
0.963	63614.9	9.226	54317.9	7.878	-0.014

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 12 MACH NO: 0.77 ADV. RATIO: 3.072

POWER COEFF: 0.229 RECORD NO: 129.0



# **LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST**

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**OPERATING PARAMETERS FOR RECORD NUMBER: 129.0**

## **WIND TUNNEL:**

STATIC TEMPERATURE:	279.0 K	42.5 F
STATIC PRESSURE:	64860.0 PA	9.407 PSI
AIR DENSITY:	0.8098 KG/M3	0.05056 LBF/FT3
SPEED OF SOUND:	334.86 M/S	1098.67 FT/S
INFLOW MACH NUMBER:	0.77	
INFLOW VELOCITY:	257.84 M/S	845.98 FT/S

## **PROPFAN:**

RADIAL STATION:	12	
ROTOR SPEED (RPM):	1840.0	
ADVANCE RATIO:	3.072	
POWER COEFFICIENT:	0.229	
BLADE ANGLE (@ X=41" STA):	55.8 DEG.	
BLADE CHORD:	0.1651 M	6.50 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3685 M	53.88 IN.
RADIUS RATIO (@ MID CHORD):	0.986	
REL MACH NO. (@ MID CHORD):	1.098	

RUN DATE:	03-11-1987
RUN TIME:	18:39:32

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 129.0

RADIAL STATION: 12

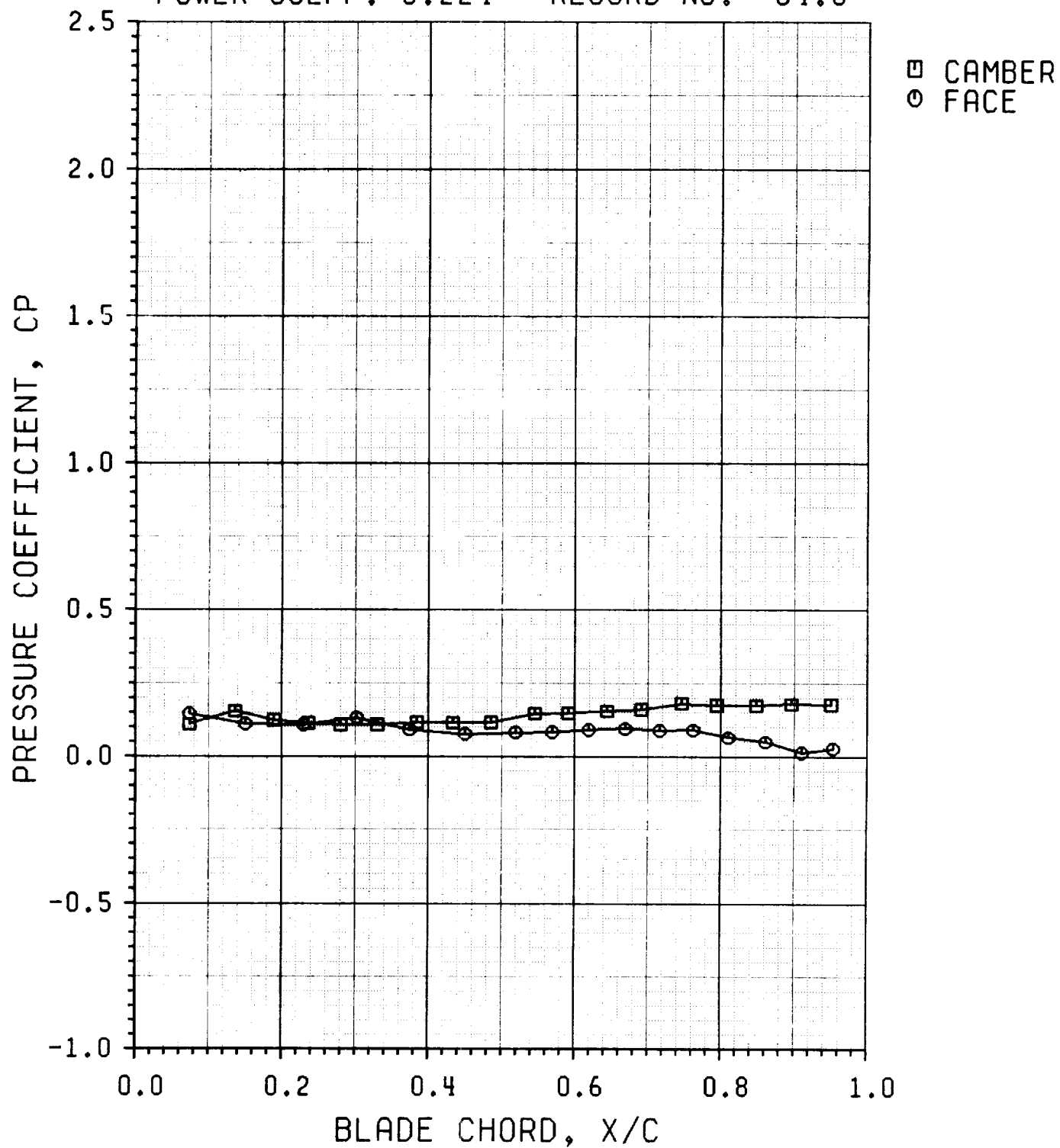
TUNNEL STATIC PRESSURE, PO: 64860.0 PA, 9.407 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.065	57610.8	8.855	54279.4	7.872	-0.134
0.118	59124.4	8.575	54290.6	7.874	-0.106
0.160	59274.7	8.597	54294.0	7.874	-0.103
0.206	56547.4	8.201	54289.7	7.874	-0.153
0.262	55000.8	7.977	54288.6	7.874	-0.182
0.308	53499.7	7.759	54278.9	7.872	-0.209
0.361	56002.4	8.122	54291.7	7.874	-0.163
0.412	54763.8	7.942	54281.2	7.873	-0.186
0.460	54272.8	7.871	54272.5	7.871	-0.195
0.510	54777.2	7.944	54285.3	7.873	-0.186
0.561	54681.1	7.931	54296.0	7.875	-0.187
0.610	54271.7	7.871	54309.5	7.877	-0.195
0.657	53202.1	7.716	54300.5	7.875	-0.215
0.707	53508.8	7.761	54302.7	7.876	-0.209
0.760	53286.9	7.728	54301.3	7.875	-0.213
0.811	53257.9	7.724	54304.5	7.876	-0.214
0.862	53891.0	7.816	54307.0	7.876	-0.202
0.913	54364.4	7.885	54319.7	7.878	-0.193
0.960	55103.5	7.992	54322.8	7.879	-0.180
FACE					
0.065	60636.9	8.794	54266.2	7.870	-0.078
0.132	60430.6	8.764	54270.5	7.871	-0.082
0.202	61356.2	8.899	54260.0	7.869	-0.065
0.270	59569.6	8.640	54260.1	7.869	-0.098
0.335	59797.3	8.673	54256.3	7.869	-0.093
0.401	60425.5	8.764	54253.7	7.869	-0.082
0.468	61791.1	8.962	54253.2	7.868	-0.057
0.537	62175.5	9.017	54248.5	7.868	-0.049
0.594	61873.0	8.974	54261.9	7.870	-0.055
0.654	61262.4	8.885	54260.8	7.870	-0.066
0.707	61475.4	8.916	54274.9	7.872	-0.062
0.760	61611.7	8.936	54274.5	7.872	-0.060
0.802	63015.8	9.139	54269.8	7.871	-0.034
0.862	63829.1	9.257	54284.4	7.873	-0.019
0.912	65748.7	9.536	54280.1	7.872	0.016
0.958	64572.4	9.365	54291.8	7.874	-0.005

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.

RADIAL STA: 13 MACH NO: 0.78 ADV. RATIO: 3.100

POWER COEFF: 0.224 RECORD NO: 64.0



# LAP/SR7 BLADE — STEADY SURFACE PRESSURE TEST

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OPERATING PARAMETERS FOR RECORD NUMBER: 64.0

## WIND TUNNEL:

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STATIC TEMPERATURE:	277.0 K	38.9 F
STATIC PRESSURE:	64150.0 PA	9.304 PSI
AIR DENSITY:	0.8067 KG/M3	0.05036 LBF/FT3
SPEED OF SOUND:	333.66 M/S	1094.73 FT/S
INFLOW MACH NUMBER:	0.78	
INFLOW VELOCITY:	260.25 M/S	853.89 FT/S

## PROPFAN:

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RADIAL STATION:	18	
ROTOR SPEED (RPM):	1840.0	
ADVANCE RATIO:	8.100	
POWER COEFFICIENT:	0.224	
BLADE ANGLE (@ X=41" STA):	55.2 DEG.	
BLADE CHORD:	0.1461 M	5.75 IN.
RADIAL DISTANCE TO TIP (@ MID CHORD POINT):	1.3689 M	53.89 IN.
RADIUS RATIO (@ MID CHORD):	0.995	
REL MACH NO. (@ MID CHORD):	1.108	

RUN DATE:	03-09-1987
RUN TIME:	17:09:13

# LAP/SR7 BLADE - CORRECTED STEADY SURFACE PRESSURES

RECORD NUMBER: 64.0

RADIAL STATION: 13

TUNNEL STATIC PRESSURE, PO: 64150.0 PA, 9.304 PSI

CHORD, X/C	SURFACE PRESSURE (PA), (PSI)		DYNAMIC PRESSURE (PA), (PSI)		PRESSURE COEFF.
CAMBER					
0.074	58164.1	8.436	55158.2	8.000	-0.109
0.136	55645.4	8.070	55162.0	8.000	-0.154
0.189	57346.9	8.317	55136.9	7.997	-0.123
0.236	57903.6	8.398	55140.7	7.997	-0.113
0.280	58267.7	8.451	55143.4	7.998	-0.107
0.330	58222.4	8.444	55128.6	7.995	-0.108
0.384	57821.4	8.386	55132.2	7.996	-0.115
0.433	57885.5	8.395	55132.4	7.996	-0.114
0.485	57820.9	8.386	55119.8	7.994	-0.115
0.545	56109.4	8.138	55120.7	7.994	-0.146
0.591	56047.4	8.129	55122.8	7.995	-0.147
0.644	55647.3	8.071	55115.1	7.993	-0.154
0.691	55346.2	8.027	55111.2	7.993	-0.160
0.746	54175.7	7.857	55110.3	7.993	-0.181
0.794	54480.7	7.901	55118.9	7.994	-0.175
0.848	54584.5	7.917	55115.9	7.994	-0.174
0.896	54308.2	7.876	55116.0	7.994	-0.179
0.950	54321.1	7.878	55118.7	7.994	-0.178
FACE					
0.074	56162.6	8.145	55132.8	7.996	-0.145
0.150	58090.6	8.425	55124.0	7.995	-0.110
0.229	58181.3	8.438	55130.2	7.996	-0.108
0.302	56951.3	8.260	55110.6	7.993	-0.131
0.374	59152.4	8.579	55110.6	7.993	-0.091
0.450	59967.0	8.697	55106.1	7.992	-0.076
0.519	59700.5	8.659	55094.0	7.990	-0.081
0.569	59615.2	8.646	55093.6	7.990	-0.082
0.619	59213.4	8.588	55096.0	7.991	-0.090
0.669	58950.9	8.550	55099.6	7.991	-0.094
0.716	59301.9	8.601	55099.7	7.991	-0.088
0.762	59225.3	8.590	55097.4	7.991	-0.089
0.810	60621.6	8.792	55089.9	7.990	-0.064
0.861	61473.2	8.916	55080.1	7.988	-0.049
0.910	63492.9	9.209	55101.9	7.992	-0.012
0.953	62694.8	9.093	55090.3	7.990	-0.026

NOTE: \*\*\* INDICATES UNSUCCESSFUL DATA ACQUISITION.



1. Report No. NASA CR-182124		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Measurement of the Steady Surface Pressure Distribution on a Single Rotation Large Scale Advanced Prop-Fan Blade at Mach Numbers from 0.03 to 0.78				5. Report Date July 1988	
				6. Performing Organization Code	
7. Author(s) Peter Bushnell				8. Performing Organization Report No. None (E-4137)	
				10. Work Unit No. 535-03-01	
9. Performing Organization Name and Address Hamilton Standard Windsor Locks, Connecticut 06096				11. Contract or Grant No. NAS3-23051	
				13. Type of Report and Period Covered Contractor Report Final	
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Lewis Research Center Cleveland, Ohio 44135-3191				14. Sponsoring Agency Code	
15. Supplementary Notes Project Manager, J. Joseph Notarantonio, Propulsion Systems Division, NASA Lewis Research Center.					
16. Abstract An experimental investigation to determine the aerodynamic pressure distribution on a rotating Prop-Fan blade has been performed by Hamilton Standard Division of United Technologies Corporation, under contract to NASA-Lewis Research Center, at the S1-MA wind tunnel facility operated by the Office National D'Etudes et de Recherches Aeronautiques (ONERA) in Modane, France. The investigation consisted of measuring the pressure distributions at thirteen radial stations on a single rotation Large Scale Advanced Prop-Fan (LAP/SR7) blade, for a sequence of operating conditions including inflow Mach numbers ranging from 0.03 to 0.78. Pressure distributions for more than one power coefficient and/or advance ratio setting were measured for most of the inflow Mach numbers investigated. Due to facility power limitations the Prop-Fan test installation was a two bladed version of the eight bladed design configuration. The power coefficient range investigated was therefore selected to cover typical power loading per blade conditions which occur within the Prop-Fan operating envelope. The experimental results provide an extensive source of information on the aerodynamic behavior of the swept Prop-Fan blade, including details which have been elusive to current computational models and do not appear in two dimensional airfoil data.					
17. Key Words (Suggested by Author(s)) Prop-Fan					
				Date for general release July 1990	
				Subject Category 07	
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